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Graduate Programs 1982-84

AT THE UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN

Information contained herein is for informational purposes only and is subject to change without notice. Individual departments and units should be contacted for further information. Courses, faculty assignments, prerequisites, graduation or completion requirements, standards, tuition and fees, and programs may be changed from time to time. Courses are not necessarily offered each semester or each year. The University retains the exclusive right to judge academic proficiency and may decline to award any degree, certificate, or other evidence of successful completion of a program, curriculum, or course of instruction based thereupon. While some academic programs described herein are designed for the purposes of qualifying students for registration, certification, or licensure in a profession, successful completion of any such program in no way assures registration, certification, or licensure by an agency not the University of Illinois.

University of Illinois administrative offices at Urbana-Champaign are open daily from 8:00 a.m. to 12:00 noon and 1:00 to 5:00 p.m. Monday through Friday, but not Saturdays, Sundays, or all-campus holidays which are indicated in the University Calendar.

Graduate College telephone: (217) 333-0035

An information center, available to visitors to the campus, is located in the north entrance lobby of the Illini Union. The center is open from 8:00 a.m. to 8:00 p.m. daily, including Saturdays and Sundays when classes are in session.

Campus telephone: (217) 333-1000

The policy of the University of Illinois is to comply fully with applicable federal and state nondiscrimination and equal opportunity laws, orders, and regulations. The University of Illinois will not discriminate in its programs and activities against any person because of race, color, national origin, religion, age, sex, handicap, or status as a disabled veteran or veteran of the Vietnam era. This nondiscrimination policy applies to admissions, employment, and access to and treatment in University programs and activities.

Vice-President Ronald W. Brady has been designated as the equal opportunity officer for the University of Illinois. For additional information on the equal opportunity and affirmative action policies of the University, please contact on the Urbana-Champaign campus: the assistant chancellor and director of affirmative action, 107 Coble Hall, 801 South Wright Street, Champaign, IL 61820, (217) 333-0574.

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Graduate Programs 1982-84

AT THE UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN

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Ralph C. Hahn, 1320 South State Street, Springfield 62704
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David T. Persons (Chicago Circle), 6730 South Lake Shore Drive, Chicago 60649

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Donald F. Wendel, B.S., Vice-Chancellor for Administrative Affairs
Theodore L. Brown, Ph.D., Vice-Chancellor for Research and Dean of the Graduate College
Stanley R. Levy, Ph.D., Vice-Chancellor for Student Affairs

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Richard K. Barksdale, Ph.D., Associate Dean
Dillon E. Mapother, Ph.D., Associate Dean and Associate Vice-Chancellor for Research
Harvey J. Stapleton, Ph.D., Associate Dean
Linda S. Wilson, Ph.D., Associate Dean, Associate Vice-Chancellor for Research, and Executive Secretary of the Research Board
Elaine J. Copeland, Ph.D., Assistant Dean
Helen C. Peterson, A.M., Assistant to the Dean and Executive Secretary of the Executive Committee

UNIVERSITY CALENDAR — URBANA-CHAMPAIGN CAMPUS

A Graduate College calendar giving important dates and deadlines for graduate students enrolled on campus may be obtained from the Graduate College, University of Illinois at Urbana-Champaign, 330 Administration Building, 506 South Wright Street, Urbana, Illinois 61801.

Spring Semester 1982

Jan. 13, Wed.-Jan. 14, Thurs.	Registration
Jan. 18, Mon.	Instruction begins
Mar. 13, Sat., 1:00 p.m.-Mar. 21, Sun.	Spring vacation
May 8, Sat.-May 15, Sat.	Semester examinations*
May 16, Sun.	Commencement exercises

Intersession 1982

May 17, Mon.	Instruction begins
June 4, Fri.	Instruction ends

Summer Session 1982

June 10, Thurs.-June 11, Fri., noon	Registration
June 14, Mon.	Instruction begins
July 5, Mon.	Independence Day (all-campus holiday)
July 12, Mon.	Beginning of second four-week session
Aug. 6, Fri.-Aug. 7, Sat.	Summer session examinations

* College of Law final examinations are May 5-15.

Fall Semester 1983

Aug. 22, Mon.-Aug. 23, Tues.	Registration
Aug. 25, Thurs.	Instruction begins
Sept. 5, Mon.	Labor Day (all-campus holiday)
Nov. 23, Wed., 5:00 p.m.-Nov. 27, Sun.	Thanksgiving vacation
Nov. 28, Mon., 7:00 a.m.	Instruction resumes
Dec. 13, Tues.-Dec. 20, Tues.	Semester examinations

Spring Semester 1984

Jan. 9, Mon.-Jan. 10, Tues.	Registration
Jan. 12, Thurs.	Instruction begins
Mar. 11, Sun.-Mar. 18, Sun.	Spring vacation
Mar. 19, Mon., 7:00 a.m.	Instruction resumes
May 4, Fri.-May 11, Fri.	Semester examinations
May 12, Sat.	Commencement

Intersession 1984

May 14, Mon.	Instruction begins
June 1, Fri.	Instruction ends

Summer Session 1984

June 7, Thurs.-June 8, Fri., noon	Registration
June 11, Mon.	Instruction begins
July 4, Wed.	Independence Day (all-campus holiday)
July 9, Mon.	Beginning of second four-week session
Aug. 2, Thurs., 12:50 p.m.	Instruction ends
Aug. 3, Fri.-Aug. 4, Sat.	Summer session examinations

GRADUATE EDUCATION AT THE UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN

The University of Illinois was founded in 1867 as the land grant institution of the State of Illinois. The University of Illinois is composed of two campuses — the original campus at Urbana-Champaign and the Chicago campus. (Effective September 1, 1982, the Medical Center and Chicago Circle campuses will be united as the University of Illinois at Chicago.)

From modest beginnings as the Illinois Industrial College, the Urbana-Champaign campus has grown to a community of more than 34,000 students of whom 7,300 are enrolled in the Graduate College. The Urbana-Champaign campus is the center of graduate education in the University of Illinois system. A distinguished graduate faculty of more than 2,000 members supervises and guides graduate study leading to advanced degrees in more than 100 fields of study.

The Graduate College is an administrative unit which has jurisdiction over all programs leading to advanced degrees. It is the statutory responsibility of the Graduate College to develop and safeguard standards of graduate work and to promote and assist research by faculty members and graduate students in all fields.

The responsibility for initiating, developing, and administering degree programs is delegated to the departments and other academic units. The Graduate College provides supporting services as well as general supervision to these degree-granting units. All postbaccalaureate students, except those in curricula leading to the degrees of Juris Doctor and Doctor of Veterinary Medicine, are enrolled in the Graduate College rather than in a disciplinary college.

GRADUATE FACULTY

The approximately 2,000 distinguished faculty members of the Graduate College are selected from among the University's most active scholars — those who achieve national or international stature in their respective fields. A list of graduate faculty for each department or unit appears at the head of each departmental entry in Programs of Study section.

GRADUATE DEGREES

The University of Illinois at Urbana-Champaign is a comprehensive graduate institution offering graduate degrees in more than 100 fields of study. In addition to the A.M. or M.S. and Ph.D. degrees offered in many disciplines, a number of departments offer work leading to other graduate degrees. Among these are master's and doctoral degrees in professional and performing arts fields and a number of master's degrees in teaching.

Descriptions of these degrees are given in the appropriate departmental sections of this *Graduate Programs* catalog. More detailed descriptions of graduate programs and the requirements for the degrees may be obtained from these individual departments.

JOINT DEGREE PROGRAMS

It is possible, with the prior approval of both departments, to pursue two postbaccalaureate degrees simultaneously. In certain approved combinations, the total time for the two degrees may be decreased by the acceptance of required courses in one degree program as electives in the other. Approved joint degree programs include: Juris Doctor and Master of Accounting Science, Juris Doctor and Master of Business Administration, Juris Doctor and Master of Arts in Labor and Industrial Relations, Juris Doctor and Master of Arts in Public Administration, Master of Architecture and Master of Business Administration, and Master of Urban Planning and Master of Architecture. In addition, programs have been approved which enable the student to complete a four-year undergraduate program and a two-year graduate program in a total of five years. These include Bachelor of Arts in Liberal Arts and Sciences and Master of Business Administration, Bachelor of Science in Computer Science and Master of Accounting Science, and Bachelor of Science in Accountancy and Master of Computer Science.

Further information on the above programs may be obtained from the appropriate program offices.

GRADUATE RESEARCH AND INSTRUCTIONAL RESOURCES

The University of Illinois at Urbana-Champaign is a comprehensive graduate institution. A distinguished graduate faculty, outstanding research facilities, one of the top-ranked libraries in the nation, and superior computer facilities make the Urbana-Champaign campus a stimulating environment for graduate study and research.

It is not possible to describe here all of the research facilities and educational opportunities available to graduate students on the Urbana-Champaign campus. The information on the following pages provides some description of the facilities and resources which are centralized and available to students and faculty in the ten broad fields of study of the disciplinary colleges — agriculture, applied life studies, commerce and business administration, communications, education, engineering, fine and applied arts, law, liberal arts and sciences, and veterinary medicine. The instructional and research programs of individual departments and of interdisciplinary and other graduate units are described in the Programs of Study section of this catalog.

UNIVERSITY LIBRARY

The University Library's resources for advanced study and research are exceptional. Its catalogued collections exceed 7 million volumes. Its uncatalogued collections include 515,000 pamphlets, 460,000 maps and aerial photographs, 900,000 music scores and parts, and 1,350,000 microtexts. In addition, the library receives more than 80,000 periodicals, serials, and newspapers. This wealth of material is housed in the main library (3,800,000 volumes in the bookstacks) and thirty-four departmental libraries at various locations about the campus.

Outstanding collections have been developed in a number of areas. In the humanities: classical literature and archaeology; English litera-

ture of the sixteenth through the twentieth centuries; Romance and Slavic literature; German literature of the sixteenth and seventeenth centuries; American humor and folklore; and comparative philology. In the fine arts: architecture; landscape architecture; and music. In the social sciences: history of the western United States; Abraham Lincoln and the Civil War; Latin America of the revolutionary period; the Slavic countries; Ireland; medieval and modern Europe; international law; labor and industrial relations; and political science. In the sciences and technology: agriculture; biological sciences (especially entomology, ornithology, and parasitology); chemistry; geology; mathematics; and physics.

The Rare Book Room houses a superior collection of more than 150,000 volumes, including more than 1,000 incunabula. The collection has three major areas of strength: English history and literature, the history of geology, and the emblem book collection. The Milton collection is the finest in the world, including more than 400 different editions of his works published during the seventeenth and eighteenth centuries. The oldest printed book is a 1455 copy of the Book of Genesis of the Gutenberg Bible; the most valuable is the Audubon Folio on permanent display. The catalog of the collection has been published.

The completeness of the bibliographic and reference facilities makes any sort of research possible. In addition, interlibrary loan service is provided for faculty and graduate student research.

CENTER FOR ADVANCED STUDY

The Center for Advanced Study, a special academic unit of the Graduate College, is committed to recognizing excellence in scholarship and creative achievement. Through its associates and fellows programs, the center provides released time for selected faculty to expand their professional capabilities and to develop new research initiatives. The Resident Studies Program of the center is aimed at generating new programs and enhancing collaboration across departmental and institutional boundaries on issues of importance to the campus and society at large.

The center also administers the activities of the Miller Endowment Committee which each year invites distinguished men and women to the campus as Miller Visiting Professors and younger persons of promise as Miller Visiting Scholars. The Miller Committee annually sponsors the MILLERCOMM series of lectures, concerts, performances, and other events of broad cultural interest.

CAMPUS-WIDE RESEARCH SERVICES

The Campus-Wide Research Services Office, a unit of the Office of the Vice-Chancellor for Research, is a clearinghouse for information about possible funding sources for faculty, staff, and graduate students. The resources contained in the office are of use to those individuals searching for money for research, travel, or completing a dissertation, to name a few. In addition to detailed file information and reference books on federal, foundation, state, university, and not-for-profit funding sources, the office has publications on proposal writing and grantsmanship, offers seminars and workshops, consults on proposal budgets, and distributes a biweekly faculty newsletter.

GENERAL COMPUTING FACILITIES

The Computing Services Office (CSO) on the Urbana-Champaign campus provides support for all academic and research programs in which computers play a significant role. To meet this broad objective, CSO operates four general-purpose computers, a large CDC CYBER 175, a CYBER 174, an IBM 4341, and a VAX 11/780. These systems are interconnected and serve a network of RJE facilities, public terminal sites, and dial-up terminals. CSO operates sites around the campus as well as serving private facilities.

Administration of computing facilities is guided by the principle that users should have easy access to computer support. Access to the system is provided through formal allocations for courses and research, and through a "limited free access" policy for students. In addition to its own facilities, CSO arranges access to other computers within the University.

Members of more than 100 University departments use CSO facilities. The graduate curricula are heavily dependent on computing support, and a large percentage of dissertations require some computer use. Approximately two-thirds of the utilization is related to graduate programs and research. Unusual areas of strength include computer music and computer art, in addition to those in more quantitative disciplines.

CSO offers a full complement of computer-related user services, including consulting on systems, packages, and hardware. Support services in keypunching, hardware maintenance, and text processing are also available on a limited basis.

The primary facility, CSO North, is located in the Digital Computer Laboratory, and houses the various computers and most of the CSO offices. Nearby systems consultants offer a wide range of services

ranging from a walk-in consulting office to short courses and seminars.

A second major facility, CSO South, is located in the Commerce Building (West). It consists of two remote job entry stations, terminals connected to the major systems, and a statistical consulting office. Three major facilities staffed by students are located in residence halls.

The long tradition of computer use at Illinois has led to widespread strength both within CSO and across the campus, and CSO provides general support to keep the University in the forefront in areas where computing is important.

COMPUTER-BASED EDUCATION RESEARCH LABORATORY

The PLATO system (Programmed Learning And Teaching Operations), a unique computer-based educational system, was developed in the Computer-based Education Research Laboratory (CERL) on the Urbana-Champaign campus. The PLATO system is an interactive, time-sharing system whose computers control 1,300 terminals located throughout the country. A CDC 6500-series computer with two central processors and 128,000 sixty-bit words of central memory and a CYBER 73 with two processors and 65,000 sixty-bit words of central memory are the heart of the system. The system also includes two million words of extended core storage and one million words of auxiliary memory storage, plus permanent storage of 4.2 billion characters, available to users at any time.

The PLATO terminals use plasma panels for visual display. The plasma panels and the computer-to-terminal communication scheme were developed at CERL, as were the terminals and other devices such as touch panels and audio. Although the computers are dedicated to educational use and provide teaching facilities for over 100,000 hours of student and author use per semester, hardware and software research continues in the laboratory. Opportunities are available for research in designing terminals and communication devices, as well as in developing the delivery of PLATO materials to cable television and to new system configurations such as "clusters."

CERL also cooperates with faculty in many departments who wish to develop courseware for the system and to incorporate it in their instruction. There are approximately 350 PLATO terminals on the Urbana-Champaign campus, more than 200 of which are available for student use. Individualized instruction on the PLATO system with immediate and rapid feedback is offered in many campus courses, both undergraduate and graduate. Lessons exist in more than 100 subject areas. The PLATO system also plays a role in the recreational

life of the campus with its variety of interesting games, and is a fascinating communication device providing electronic mail service and immediate message exchange between users. At least 8,000 students per semester are involved with the PLATO system.

Courseware is written in the TUTOR language, a powerful and efficient language created for the PLATO system, which allows design, programming, and testing of lesson materials by the authors directly at the terminals. The PLATO computers are dedicated to teaching, but the system is also used for scientific computation, information retrieval, word processing, data processing, and personal services.

In addition to the University of Illinois system, there now exist sixteen other PLATO systems in Canada, Minnesota, Belgium, Florida, California, South Africa, Delaware, Australia, United Kingdom, Sweden, and South Korea, with electronic linkage interconnecting many of them.

AGRICULTURE

The College of Agriculture is a broadly based organization with a number of missions that continue to be developed and refined after more than a century of existence. These missions relate to commercial agriculture, including environmental concerns and preservation of our natural resources, and to improvement of the quality of life both in the home and the community. Much of the work of the college is designed to open up new opportunities by searching for solutions to specific problems and to bring this new knowledge to those who need it. Its work has application in all parts of society and all parts of the world.

The college has active programs in four broad areas — teaching, research, international agriculture, and extension education and public service. The college includes the School of Human Resources and Family Studies with four departments, Family and Consumer Economics, Foods and Nutrition, Human Development and Family Ecology, and Textiles and Interior Design; the Division of Nutritional Sciences; and the Departments of Agricultural Economics, Agricultural Engineering, Agronomy, Animal Science, Dairy Science, Food Science, Forestry, Horticulture, and Plant Pathology. Additionally, students can major in Agricultural Communications, Agricultural Education, and Home Economics Education. More than 8,000 acres of college farmland in all parts of Illinois are used for experimentation. The academic and professional staff numbers more than 1,200, many of whom work in more than one of the four areas of the college.

Programs for graduate students in the various departments and the school are described in their sections later in this catalog. Approximately 280 of the college faculty are members of the graduate faculty. About 550 graduate students register each year for work in the college, and approximately 35 Ph.D. and 115 M.S. degrees are conferred annually. Approximately 2,400 students are enrolled in the undergraduate programs of the college.

The college conducts research through the Agricultural Experiment Station, and graduate students are an integral part of that research. Because research often involves more than one field of study, much of it is conducted in cooperation with other colleges on the Urbana-Champaign campus, with the state surveys located on the campus (Geological, Natural History, and Water), with the U.S. Department of Agriculture, and with other agricultural colleges. Interdisciplinary research is encouraged in such special areas as crop and animal production and uses, environmental quality, pest management, the International Soybean Program (INTSOY), and food and nutrition. Financial support for research comes from appropriations by the State of Illinois, from federal appropriations and contracts, from international agencies, and from private gifts and fellowships.

Student interest and requests for information and assistance demonstrate that Illinois education, agriculture, and agribusiness are in the forefront of world food production and development. In the future, many students will go into the world employment market, directly or indirectly, even if they live and work in the United States. Several courses in the departments of the college emphasize international agriculture; research is conducted with the goal of assisting developing countries to expand their own capability for food production and distribution. Faculty exchanges and cooperative research with foreign institutions and agencies offer opportunities for mutually beneficial programs. The broad supervision of the college's international activity is in the Office of International Agriculture. Some major international interests in the College of Agriculture include soybeans, maize, animal agriculture, and nutrition.

The college's extension education work is through the Cooperative Extension Service, which has a staff of state, regional, and county specialists in 115 offices throughout the state. The Cooperative Extension Service has 540 academic and professional staff and about 525 paraprofessionals and other support personnel.

The College of Agriculture is in the fifth year of a 10-year major development program in buildings, land, and equipment called Food for Century III. This program calls for new building projects, acquisition of land for research and major pieces of fixed equipment, and

development of research and extension facilities in northern, southern, and western Illinois. The Orr Agricultural Research and Demonstration Center in western Illinois was established in 1979 and the construction of the Agricultural Engineering Sciences Building is underway.

APPLIED LIFE STUDIES

The College of Applied Life Studies is composed of three academic graduate departments: Health and Safety Education, Leisure Studies, and Physical Education.

The goal of the Department of Health and Safety Education is an informed society which practices healthful and safe living patterns. The mission of the department and the role of the professional in the field of health and safety education include developing processes which effectively inform and motivate society and advocating and working toward achieving the desired individual, institutional, and environmental changes necessary to the attainment of this goal. Emphasis is placed on the development of analytical competencies by students such as the use of model construction and evaluation and the use of these tools of analysis for program development in the field of health and safety. Research facilities in the department include a general-purpose resource laboratory, driving simulator units, a multiple car driving range, PLATO terminals, and a classroom individual student response system.

The Department of Leisure Studies has as its central focus a concern for leisure behavior; its goals are to improve the understanding of leisure behavior and the quality of leisure service delivery systems. The primary research objectives of the Leisure Behavior Research Laboratory are to acquire knowledge about leisure behavior from the social-psychological and sociological perspective, and play and movement behavior of children and adults in leisure-time activities. The laboratory also studies leisure of the handicapped and other special populations.

The Office of Recreation and Park Resources (ORPR) is the designated service unit of the department. ORPR was merged with the Cooperative Extension Service of the College of Agriculture, offering consultation services, conducting research and continuing education, and serving as a laboratory for carrying out sound recreation research programs in cooperation with other disciplines within the University and throughout the state. The four major program and research areas served by specialists are: community recreation, outdoor recreation, personnel development, and therapeutic recreation.

The Department of Physical Education is committed to the study

of the bioscientific, social scientific, and educational aspects of human movement, physical activity, and sport. Major areas of investigation include biomechanics, motor learning, physiology of human performance, psychology of sport, sociology of sport, and administrative and curriculum studies related to physical education and sport programs for both normal and atypical populations. The department maintains several research facilities, including the Biomechanics Laboratory, the Exercise Therapy Clinic, the Motor Behavior Laboratory, the Physical Fitness Laboratory, and PDP 11/03 computer facility interfaced with each research laboratory.

COMMERCE AND BUSINESS ADMINISTRATION

The College of Commerce and Business Administration offers graduate work in the Departments of Accountancy, Business Administration, Economics, and Finance. The professional degrees, Master of Accounting Science (M.A.S.) and Master of Business Administration (M.B.A.), are offered in addition to the masters' degrees and Ph.D. degree in each of the departments.

Joint degree programs include the Juris Doctor and Master of Accounting Science, the Juris Doctor and Master of Business Administration, M.B.A. and Master of Architecture, M.B.A. and Master of Electrical Engineering, M.B.A. and Doctor of Medicine, M.B.A. and Bachelor of Arts in Liberal Arts and Sciences, M.B.A. and Research Management, M.A.S. and Bachelor of Arts in Liberal Arts and Sciences, and M.A.S. and Bachelor of Science in Computer Science.

Although the lecture-discussion form of teaching is widely used in the college, the faculty utilizes a variety of other resources to aid in the teaching process. The organization theorists use the Behavioral Laboratory for evaluating the small-group decision-making process. The computer is widely used in teaching statistics and operations research. Many cases and simulation programs and games in business administration and finance courses are dependent on the computer to generate analytical information. Also, many courses involve students in the writing of computer programs or the use of a large library of computer programs for research.

Faculty and students rely heavily on the outstanding resources of the University Library, which has a large collection of serials and periodicals. The Office of Instructional Resources aids in the improvement of the teaching skills of faculty and teaching assistants. The Executive-in-Residence Program and the Executive Lecture Series bring visiting business executives to the campus to present lectures and lead discussions on specific topics.

The most outstanding resource of the College of Commerce and Business Administration is its research-oriented faculty. The Bureau of Economic and Business Research provides and interprets a variety of state and local economic data for governmental bodies and industries. Additionally, the University Library provides substantial data on individual companies in addition to text books, reference documents, current periodicals, and serials. The college has acquired several financial data files such as the Chicago Research on Stock Prices (CRSP), the Federal Trade Commission Quarterly Financial Standard, and Poor's Compustat Tapes. There are also economic data tapes, including the Citibank tapes, and the college is the depository for the Bureau of Economic Analysis tapes.

Another important aspect of the college's overall teaching and research program is the international orientation available in many programs. Distinguished faculty members with international academic backgrounds have developed a number of special courses with an international focus. An international business concentration is available in the M.B.A. program. The Center for International Education and Research in Accounting was established by the Department of Accountancy. The center coordinates the research programs of distinguished visiting scholars and publishes an instructional accounting journal.

The Office of Real Estate Research, funded by the State of Illinois' Real Estate Recovery Fund, undertakes and fosters research related to real estate in Illinois, communicates the results of such research to the real estate industry, and promotes the ongoing development of real estate education.

The Survey Research Laboratory is widely used by faculty and students interested in survey work. The Behavioral Laboratories are used in performing a variety of behavioral experiments, and the computer is a major tool for hypothesis testing and programming.

COMMUNICATIONS

In the College of Communications, the Institute of Communications Research, which administers the doctoral program in communications, is a pioneer interdisciplinary center that investigates virtually all aspects of human communication. It provides students the opportunity to study and to conduct research with a faculty that joins such disciplines as political science, sociology, psychology, and linguistics with the professional fields of advertising, broadcasting, and journalism. The University broadcasting division, which operates WILL-AM-FM-TV, provides equipment and studios for broadcast instruction. The college also maintains laboratories for audio production,

typography, and photography. Holdings in the Communications Library in Gregory Hall are widely regarded as the best in the nation.

EDUCATION

The academic departments in the College of Education, all of which have graduate teaching and research programs, are Administration, Higher, and Continuing Education; Educational Psychology; Elementary and Early Childhood Education; Educational Policy Studies; Secondary Education; Special Education; and Vocational and Technical Education. Ten units with specialized research interests are supported by the College of Education in addition to research conducted principally within the academic departments.

In the Bureau of Educational Research, faculty from several areas of specialization do programmatic research on both basic and applied educational problems. Faculty hold temporary appointments in the bureau and are selected based on a college-wide competitive application process. The unit provides graduate students with experiences and training in research.

The faculty in the Center for Instructional Research and Curriculum Evaluation (CIRCE) conduct research on the methods and rationales for evaluating educational programs.

The Center for the Study of Reading has as its major research goal a clearer and more complete understanding of reading comprehension. The center staff consists of approximately thirty senior researchers and twenty graduate research assistants. The senior scientists represent a variety of disciplines — computer science, education, linguistics, and psychology. Each discipline brings unique theoretical and methodological tools to the study of reading comprehension, and the resulting research is providing new knowledge about the reading process and reading instruction.

Members of the Committee on Culture and Cognition do naturalistic research on the functioning of the mind and emphasize humanistic values in education and life.

The Curriculum Laboratory uses the University High School, grades 7-12, in its examination of particular aspects of the learning and teaching of secondary school subjects and the secondary school as an institution.

The Office for Educational Policy Research, with associated faculty and graduate students, serves as an information resource center and clearinghouse, and conducts research and provides assistance in all areas affecting the planning, development, and implementation of educational policy. The office serves as a key link with policy-

makers, analysts, and administrators at the state, federal, and international levels.

Faculty members and graduate students associated with the Office for the Study of Continuing Professional Education engage in research, evaluation, demonstration, and consultation regarding lifelong education for adults with an emphasis on programs and policies for continuing professional education.

The Office of International Programs in Education organizes academic linkages and interchange with other countries, coordinates activities with internationally oriented units on campus, and administers cooperative international projects with the participation of faculty concerned with international education and development.

The Office of Multicultural Bilingual Education coordinates the graduate program offerings in bilingual and multicultural education, promotes research in the relationships between language and culture and between achievement and native language development, and undertakes studies of factors influencing the effectiveness of bilingual multicultural curriculum and instruction.

The Office of Vocational Education Research is a unit within the Department of Vocational and Technical Education with the purpose of acquiring external research funds and facilitating the conduct of research by students and faculty.

All these units have active research programs and most offer assistantships or fellowships to qualified doctoral students.

ENGINEERING

One of the original units of the University when it was founded in 1867, the College of Engineering is recognized as a major international center of excellence in graduate education in scope, quality, and productivity. In overall quality, the college has been among the top four in the nation in all surveys of recent years. A 1974 survey of engineering deans listed the college as second among engineering colleges in the U.S. in terms of overall quality. A report of engineering faculty opinion published in *The Chronicle of Higher Education* in January 1979 placed the college among the top four institutions. In 1977-78 the University led the nation in total degrees conferred at all degree levels; in recent years one out of every twenty Ph.D. graduates in engineering received his or her degree from the University of Illinois at Urbana-Champaign.

The college's Engineering Experiment Station, organized in 1903 as the first of its kind, had separately budgeted research expenditures in the 1981 fiscal year of $30.3 million. Special laboratories and unusual facilities such as the nuclear reactor, radio and optical tele-

scopes, AVCO HPL-10 20-kW industrial laser, and an 80-kW plasma spray unit are available. University computer services are provided by four general purpose computers, a large CDC CBER 175, a CYBER 174, an IBM 4341, and a VAX 11/780. The Engineering Library holds 169,000 volumes and more than 3,460 periodical subscriptions. It is supplemented by a series of departmental libraries including mathematics, physics, chemistry, and geology.

The departments of the college offer graduate degree programs in aeronautical and astronautical, ceramic, civil and environmental, electrical, mechanical and industrial, metallurgical, and nuclear engineering, and in computer science, physics, and theoretical and applied mechanics. Interdisciplinary specialities include bioengineering, engineering design, environmental control, and materials engineering.

The college maintains two major interdisciplinary research laboratories: the Coordinated Science Laboratory (CSL) and the Materials Research Laboratory (MRL). CSL provides an interdisciplinary research environment for faculty and students from engineering as well as other disciplines. MRL, one of the outstanding facilities for electron microscopy in the United States, supports research and education in the materials sciences in cooperation with a number of engineering and scientific disciplines; multidisciplinary research basic to an understanding of the solid state of matter is stressed. Both laboratories maintain special facilities and shops to promote their programs of investigation.

The Advanced Environmental Control Technology Research Center has been established in the college under a cooperative agreement with the U.S. Environmental Protection Agency to investigate problems associated with the technology of environmental quality control of land, air, and water. The Materials Engineering Research Laboratory is an interdisciplinary laboratory with extensive equipment for the characterization of the mechanical behavior of materials.

FINE AND APPLIED ARTS

The College of Fine and Applied Arts includes the Departments of Dance, Landscape Architecture, Theatre, and Urban and Regional Planning, and the Schools of Art and Design, Architecture, and Music. The "research" resources for these departments are also the cultural resources of the campus described in another section of this catalog. The Krannert Center for the Performing Arts provides studio space for classes in theatre, dance, and music; graduate students participate in many of the public performances in its four theatres. Students in the School of Art and Design have an annual

exhibition of their work in the Krannert Art Museum, which is connected to the Art and Design Building. The work of architecture students is exhibited in the Temple Buell Architecture Gallery.

Many visiting artists, performers, and speakers are brought to the campus under the auspices of the college and its departments. Special libraries in art and architecture, city planning and landscape architecture, and music serve students and faculty in the fine and applied arts.

LAW

The College of Law offers graduate training in all areas of its curriculum. The emphasis for graduate lawyers from the U.S. and from Commonwealth countries, whose legal system is based on the common law, is to provide advanced training in preparation for a career in teaching or specialized practice. A substantial program in international legal studies affords opportunities both for U.S. graduates and foreign lawyers to select from a wide variety of advanced courses, and to engage in research dealing with all phases of international transactions. The main geographic focus of the international legal studies program has been on the legal systems of Latin America and of Western and Eastern Europe.

LIBERAL ARTS AND SCIENCES

The comprehensive graduate instruction and research in the liberal arts and sciences is conducted on the Urbana-Champaign campus in the departments of four schools — Chemical Sciences, Humanities, Life Sciences, and Social Sciences — and in five independent departments — Astronomy, Geology, Mathematics, Psychology, and Speech and Hearing Science. The graduate instructional programs of the individual departments are discussed in the Programs of Study section of this catalog.

Chemical Sciences

The School of Chemical Sciences provides a centralized administrative and service structure for the teaching and research programs in the Departments of Biochemistry, Chemical Engineering, and Chemistry. Currently there are about 1,200 undergraduate concentrators and majors, 450 graduate students, 60 postdoctoral students, and 70 faculty members involved in the various programs in the school. For graduate students, the Master of Science and Doctor of Philosophy degree programs in each of the three departments, a Master of Science degree program in the teaching of chemistry, and a joint

program with the Department of Physics leading to the Doctor of Philosophy in Chemical Physics are available.

Of particular value to the graduate students in the School of Chemical Sciences is the array of service facilities that are provided on a centralized basis. These facilities free faculty members for greater concentration on teaching and directing graduate student thesis research. The facilities also assist the students in a variety of ways. Of direct importance to the students are the 45,000-volume Chemistry Library, the Chemistry Placement Office, and several technical service facilities. The technical facilities include molecular spectroscopy, mass spectroscopy, and laser spectroscopy laboratories, a radioisotope laboratory, a computer center, a microanalytical laboratory, hydrogenation and high-pressure facilities, and machine, electronic, electrical, and glass-blowing shops. Also, the school is now developing a Regional NMR Instrumentation Facility under the auspices of the National Science Foundation. These laboratories and shops are staffed with full-time technical personnel who maintain the facilities, supervise their scheduling, and, in many cases, provide instruction on their use. Most of them are operated on an open-shop basis in which qualified students are permitted to work without supervision.

Humanities

The School of Humanities is the association of thirteen departments and programs in the humanities; it also maintains cooperative relationships with allied departments in other colleges. The school encompasses the Departments of the Classics; English; French; Germanic Languages and Literatures; History; Linguistics; Philosophy; Slavic Languages and Literatures; Spanish, Italian, and Portuguese; Speech Communication; the Programs in Comparative Literature and Religious Studies; and the Division of English as a Second Language. The various departments and programs consist of almost 280 faculty and approximately 400 graduate teaching and research assistants. The School of Humanities' primary responsibility is to promote humanistic teaching, research, and public service both in the traditional disciplines and in interdisciplinary fields. In addition to traditional fields of study, the school offers various special and interdisciplinary subjects including cinema studies, American civilization, history and philosophy of science, medieval civilization, and Renaissance studies. Graduate programs leading to the master's and doctoral degrees are available in American civilization and the history and philosophy of science; these programs and the work of individual degree candidates are supervised by interdisciplinary advisory committees.

Other units within the school offer special research and study opportunities. The Unit for Cinema Studies promotes and coordinates the critical and historical study of the cinema through teaching and research within the Humanities Department, and cooperates with other units dealing with cinema or cinematography. Its membership represents several departments and reflects a variety of critical and scholarly interests. The unit is also a resource center which promotes cinema teaching and scholarship through its growing archive of film materials and its editorial and analytical equipment for film study.

The Unit for Criticism and Interpretive Theory, an interdisciplinary program drawing upon fifteen humanities and social science departments, promotes a broad range of teaching, research, and related scholarly activities including the Faculty Criticism Seminar, designated ongoing courses, a monthly colloquium, and visits of distinguished scholars. For A.M. and Ph.D. students in participating departments, the unit offers a formal program leading to advanced certification in criticism and interpretive theory.

The Language Learning Laboratory (LLL) supports the instructional needs of humanities and related departments, and promotes research on language learning and teaching, as well as the development of experimental or new programs and methodologies. For these activities LLL is equipped with advanced technological resources, including PLATO, CYBER, microcomputers, television production facilities, and capabilities in other audiovisual media.

The Division of Applied Linguistics is primarily research oriented and concentrates on crosscultural and crosslinguistic work with an international perspective in several fields. Research areas within this division include lexicography, linguistics and language pedagogy, sociolinguistics and multilingualism, language acquisition, and applied phonetics.

Other resources within the school include the American Center of the International Photographic Archive of Papyri, the Intensive English Institute, and several renowned scholarly and creative arts publications, among them *Ascent, Comparative Literature Studies, Illinois Classical Studies, Journal of English and Germanic Philology, Slavic Review,* and *Studies in Linguistic Sciences.*

Life Sciences

In addition to excellent laboratory equipment, the students and faculty of the School of Life Sciences have access to some unique facilities. The Illinois Natural History Survey, which is oriented primarily toward research on renewable natural resources in the state, has laboratories located on the Urbana-Champaign campus with field

laboratories throughout the state. The resources and the facilities of the survey are available to all of the departments in the School of Life Sciences. Many of the survey staff members hold joint apointments in the Departments of Botany; Entomology; and Ecology, Ethology, and Evolution.

The Museum of Natural History at the University of Illinois at Urbana-Champaign has served students in graduate research and faculty since the 1870s. A number of special collections are housed in the museum. There are outstanding research collections of reptiles, amphibians, mammals, and shells from all parts of the world. Research specimens used by graduate students and faculty scholars for advanced scientific study number over 400,000. The labeled specimens in the research collections include 51,000 mammalian, 5,400 bird, 94,000 reptile and amphibian, 600 fish, 11,000 fossil, and 250,000 mollusk specimens.

There are also a number of natural areas owned by the University and managed by the School of Life Sciences for undergraduate teaching purposes as well as graduate and faculty research. These natural areas represent a variety of plant forest habitats, flood plain forests, reconstructed prairie, and abandoned farm lands which allow for a great deal of manipulation in natural settings. In addition to these major facilities shared by a number of departments and faculty, all of the departments in Life Sciences (Anatomical Sciences; Botany; Entomology; Ecology, Ethology, and Evolution; Genetics and Development; Microbiology; Physiology and Biophysics) as well as the interdisciplinary programs (Cell Biology, Ecology, Plant Physiology, Parasitology, Neural and Behavioral Biology) have outstanding research apparatus that one would expect in a modern biology laboratory, among them, amino acid analyzers, ultracentrifuges, spectrophometric equipment, and scintillation counters.

The Center for Electron Microscopy is a campus facility operating within the School of Life Sciences. It is designed to meet the instructional and research needs of faculty and graduate students from all scientific areas on campus, as well as being involved with the development of new instructional and research techniques in electron microscopy.

The center's instructional program is among the largest and most varied in the nation for graduate and continuing education. Courses in transmission electron microscopy, scanning electron microscopy, microprobe analysis, and a variety of specialty courses are offered. All stress both the theoretical as well as the practical aspects of electron microscopy and provide participants with extensive firsthand operation of instrumentation. Summer session short courses offered

both regionally and nationally extend the instructional operation of the center. The center also sponsors a series of seminars throughout the year on varied topics relating to the science of electron microscopy.

Any campus faculty or staff member wishing to utilize electron microscope facilities may obtain the needed instruction from the center's staff and make use of the appropriate equipment on a time-share basis. In addition to electron microscopes, the center has a laboratory equipped for state-of-the-art freeze fracturing and cryoultramicrotomy. It also has a computerized digitizing system for the morphometric analyses of electron micrographs, and there are a number of ancillary equipment items for microtomy, vacuum evaporation, freeze and critical point drying, and light microscopy.

However, the major equipment holdings include three transmission electron microscopes, three scanning electron microscopes, and an automated microprobe operated in conjunction with the Department of Geology. Among these instruments are both the highest resolution scanning and transmission electron microscopes currently available for research use.

Social Sciences

The units in the School of Social Sciences (including the Departments of Anthropology, Geography, Political Science, and Sociology, and the Centers for Asian Studies and Latin American and Caribbean Studies) offer a variety of research and instructional resources for graduate study. Prominent interdisciplinary-oriented resources in the School of Social Sciences include the Social Science Quantitative Laboratory (SSQL) and the Spatial Data Analysis Laboratory (SDAL).

SSQL is responsible for developing and improving instructional approaches in social science data analysis and modeling and for assisting social science faculty and students in the acquisition of research grants and in the execution of research projects. To accomplish these objectives, SSQL maintains a computer operations unit that has full remote job entry and interactive access to the University's CDC CYBER-175, CYBER-174, and IBM-4341 computers; a consulting and archival services unit with a professional staff of consultants and archivists to assist social science faculty and students in statistical computing and in the use of any of the several hundred social science data sets maintained by SSQL; and a research-training projects unit that assists social science faculty and students in the acquisition and execution of research projects. SSQL has an executive committee, chosen from the faculty members in each of the departments in the school, which works closely with the departments in the development of their instructional and research programs.

SDAL, administered by the Department of Geography, is responsible for developing and improving research and instruction related to the acquisition, analysis, and display of spatial data. To achieve these objectives, SDAL maintains an electronic coordinate digitizer unit; computer terminals, including a graphics terminal; darkroom photo processing facilities; and a remote sensing and air photo laboratory. SDAL contains special computer program libraries for digital processing of satellite images, computer mapping, digital terrain modeling, and the creation of geographic data management systems.

VETERINARY MEDICINE

The graduate programs in the College of Veterinary Medicine emphasize research training involving animal health, infectious and metabolic diseases, zoonotic diseases, public health, and comparative medicine. The college has new, modern clinical facilities for large and small animal medicine and surgery. Additional research and animal space has been added on the Veterinary Research Farm and a new Veterinary Medicine Basic Sciences Building will be completed in 1982. The new construction will provide the college with outstanding facilities for graduate study and research. Interdisciplinary research is ongoing with other colleges on the Urbana-Champaign campus and at the Dixon Springs Agricultural Center in southern Illinois. These facilities and programs provide excellent opportunities to conduct basic, clinical, and applied studies under controlled confinement and under natural environmental conditions. The college's association with the Illinois State Department of Agriculture, Department of Public Health, and Department of Conservation provides opportunities to utilize field facilities for appropriate research projects.

RESOURCES, FACILITIES, AND SERVICES

CULTURAL RESOURCES

The University of Illinois at Urbana-Champaign provides the campus community with a broad spectrum of cultural resources. The four theatres of the Krannert Center for the Performing Arts, the Assembly Hall, and other facilities on the campus present a diversity of events in music, theatre, dance, and cinema usually found only in large metropolitan centers. There are well over 500 public performances each year covering the entire spectrum of the performing arts. Internationally known professional performers are brought to the campus to augment the offerings of the Departments of Theatre and Dance and the School of Music.

The Krannert Art Museum has a full schedule of exhibitions, both from its own collection and traveling exhibitions. The Festival Gallery in the Krannert Center for the Performing Arts brings to the campus a series of one-man shows of the work of contemporary artists. The World Heritage Museum, the Natural History Museum, and the John Phillip Sousa Museum and Library serve the purposes of research, teaching, and enjoyment. The Temple Buell Architecture Gallery provides for the exhibition of student work in architecture and related areas of study.

The Japan House provides members of the campus community an opportunity to experience the teaching of Japanese arts in a realistic environment.

Distinguished public figures and outstanding scholars appear regularly on campus for symposia, lectures, forums, and public discussions.

WILL-TV and AM-FM radio station, all affiliated with the Public Broadcasting Service, provide a wide range of cultural programs to a large area of the state.

The Illini Union, the campus social center, offers lounges, dining

facilities, and recreational and meeting rooms for individuals and groups. Special events are scheduled throughout the year. The Illini Union Gallery provides exhibits of a broad range of contemporary art and craft objects.

RECREATION FACILITIES

The Division of Campus Recreation (DCR) offers a wide variety of recreational opportunities for the entire campus community of the University of Illinois at Urbana-Champaign. Innovative programs and services provided by the Division of Campus Recreation include the informal use of recreational facilities on campus, special events, outdoor recreation programs, sports clubs, and organized intramural sports.

One of the most impressive facilities on campus is the Intramural–Physical Education Building (IMPE) on Peabody Drive. Completed in 1971, the facility contains four gymnasiums, indoor and outdoor fifty-meter pools, twenty-three racquetball courts, seven squash courts, and an outdoor ice rink–tennis court area. Additional components include exercise rooms, archery range, golf driving and putting room, saunas, game room, and other support areas.

Huff, Freer, and Kenney Gymnasiums, the Ice Arena, and numerous tennis courts and playing fields around campus are heavily scheduled for recreational use by the Division of Campus Recreation. Twenty-four bowling lanes, a nine-hole golf course on campus, and two championship courses at nearby Savoy provide additional areas for leisure activities.

With the mission of "something for everyone," the Division of Campus Recreation offers diverse programs to appeal to a wide range of interests. Special events include Quad Day, concerts, slimnastic exercise classes, and the Illini Century Club for self-paced joggers, swimmers, and cyclists. One of the newest recreational services offered to both the university and community is indoor tennis during the winter months in the Armory. The most popular of all DCR programs are the organized intramural tournaments, games, and contests scheduled throughout the year. These programmed activities offer competition for men and women in several divisions and skill levels.

For further information concerning recreation programs and facility usage, contact the Division of Campus Recreation, 170 IMPE Building, 201 East Peabody Drive, Champaign, Illinois 61820.

INTERNATIONAL PROGRAMS AND STUDIES

The University of Illinois at Urbana-Champaign offers many opportunities for graduate students to pursue international studies both at home and abroad. Graduate study and research often form an integral part of University programs with foreign institutions. Research opportunities are available through many departments, the Graduate College, the Center for International Comparative Studies, the Center for African Studies, the Center for Asian Studies, the Center for Latin American and Caribbean Studies, the Center for Russian and East European Studies, and the Office of West European Studies.

For full information on these opportunities, as well as other graduate study-abroad programs and a wide range of courses and seminars in international studies, write for the handbook *International Programs and Studies at the University of Illinois at Urbana-Champaign*, obtainable from the Office of International Programs and Studies, 3014 Foreign Languages Building, 707 South Mathews Avenue, Urbana, Illinois 61801, or contact the appropriate college or department.

In addition, overseas teaching opportunities are often available in music education, English as a second language, and some of the modern language departments. Interested students should consult the executive officer of the appropriate department or division.

CIC TRAVELING SCHOLAR PROGRAM

The Committee on Institutional Cooperation, a consortium of the Big Ten universities and the University of Chicago, has established the Traveling Scholar Program as part of its effort to increase cooperative use of its member institutions' resources. The program enables doctoral-level students to attend other CIC institutions in order to take advantage of special course offerings, laboratory facilities, or library collections. Visits of traveling scholars are limited to two semesters or three quarters. Traveling scholars register and pay regular fees at their home universities. Credit earned while in this program is automatically accepted by the home university.

Application forms are available from the Graduate College, 330 Administration Building, 506 South Wright Street, Urbana, Illinois 61801.

REHABILITATION-EDUCATION SERVICES

Since 1947 the University of Illinois at Urbana-Champaign has pioneered in facilitating the education of physically disabled students.

Campus facilities are among the best in the nation, and applications from persons with physical disabilities are welcomed. The Division of Rehabilitation-Education Services, which is responsible for the planning of all campus facilities to ensure that they are accessible to and usable by the physically disabled, provides a variety of services and opportunities to physically disabled students, including early registration privileges, housing arrangements, transportation, prosthetic repair, physical therapy and functional training, occupational therapy, medical services, counseling services, recreation and athletics, and services to the visually and hearing impaired. Applicants are encouraged to make direct contact with the division at the Rehabilitation-Education Center, 1207 South Oak Street, Champaign, Illinois 61820, for further information.

Since some graduate programs require a variety of physical skills, prospective students with permanent physical disabilities are strongly encouraged to communicate with the division to ascertain how their particular program can be implemented. The division works closely with academic units to establish the manner in which degree requirements can be met.

HOUSING

The University maintains housing for single graduate students in two residence hall areas close to the campus. Each room is furnished and directly connected with a bathroom shared with the residents of one or two other rooms. Double and single rooms are available. Lounge facilities, laundry rooms, and vending machines are located in the buildings. A contract for food service in undergraduate dining rooms may be arranged. Graduate residence hall contracts can be obtained by writing the Residence Halls Contracts Office, 200 Clark Hall, 1203 South Fourth Street, Champaign, Illinois 61820. Contracts are accepted until all available space is filled. Priority in assignment is determined by the date the completed contract and the advance payment is received.

Furnished efficiency one-bedroom and two-bedroom apartments are maintained by the University for married students and students with families. Some two-bedroom units are unfurnished, but all include stoves and refrigerators. For a contract in a University-owned apartment, write to the Family Housing Office, 1902-A South Orchard Street, Urbana, Illinois 61801.

The Housing Information Office also maintains a current listing of private apartments and rooms available in the community. Students seeking private housing are urged to visit the campus as early as possible as all reservations for this type of accommodation must

be made in person. Anyone unfamiliar with standard leasing practices should ask a housing consultant for assistance. In some instances, when demand for this type of accommodation is at a peak, it may be necessary to make arrangements as much as six months prior to the opening of the school term. The Housing Information Office is situated at 110 Fred H. Turner Student Services Building, 610 East John Street, Champaign, Illinois 61820, (217) 333-1420.

The University of Illinois at Urbana-Champaign and the University residence halls are committed to a policy of nondiscrimination with respect to race, creed, color, national orgin, religion, sex, age, handicap, or status as a disabled veteran or veteran of the Vietnam era.

HEALTH SERVICE AND INSURANCE

Students enrolled in credit courses who are in attendance on the Urbana-Champaign campus are assessed fees which cover (1) health service at the McKinley Health Center and (2) group health insurance.

Health Service

The McKinley Health Service fee supports the medical services available at the McKinley Health Center, located on campus. Dependents are not eligible for care at the health center unless they are also enrolled students on the Urbana-Champaign campus. McKinley Health Center offers five basic types of care: routine office care, hospitalization, care for injuries or acute illnesses, family planning, and mental health care. These services are available at no additional cost to all students who have paid the health service fee.

Health service physicians provide general medical care and advice while the student is on campus, and students may consult the health service physician of their choice by appointment. The physician can utilize a wide range of diagnostic tests, including laboratory procedures, X-ray examinations, and electrocardiograms. A limited pharmacy provides drugs at no cost for students when they are under the care of a health service physician.

The inpatient section of the center, McKinley Hospital, is a thirty-one bed medical hospital owned by the University and fully accredited by the Joint Commission on Accreditation of Hospitals. The medical staff includes both community and health service doctors.

Group Health Insurance

The University Student Insurance Plan provides world-wide hospital-medical-surgical coverage (up to $100,000) for the insured student (and/or dependents) who may choose any legally qualified

hospital or licensed physician. The coverage is provided on a semester basis and includes all holidays in the term as well as the period between semesters. Brochures describing the University Student Insurance Plan in detail are available at registration, the Post-Registration Service Center, and at the Student Insurance Office, Window 20, 100 Administration Building, 506 South Wright Street, Urbana, Illinois 61801 (hours: 9 a.m. to 4 p.m.).

Students presenting evidence of equivalent medical insurance coverage (a copy of the policy or schedule of benefits) will be exempted from payment of the fee for the University Student Insurance Plan upon approval of a petition submitted to the Student Insurance Office during registration or at the post-registration Service Center, or within the period provided for the exemption of fees for the relevant term.

Once exempt the student may be reinstated into the Student Insurance Plan upon the completion of a "Statement of Medical History" for the student (and each dependent, regardless of age) subject to approval by the insurance carrier. Reinstatements may be made at any time during a term, however, dependents may be enrolled only on the date the student requests to be reinstated or during the regular term enrollment periods, except for a newly eligible dependent.

Students may extend coverage for one term following graduation or withdrawal from school by making application and paying the appropriate premium at the Student Insurance Office. Coverage of the insured student's eligible dependents (only those dependents covered the immediate prior term unless they would qualify as a new dependent) may also be extended. Extension enrollment periods begin July 15 (to extend for the fall semester) and December 1 (to extend for the spring semester) and continue through the tenth instruction day of the semester, or April 15 through the fifth instruction day of the summer session (to extend for the summer).

REQUIREMENTS AND PROCEDURES

ADMISSION AND REGISTRATION

General Requirements

The Graduate College considers for admission only those applicants who hold or will be granted by the end of the current academic year a baccalaureate degree (or its equivalent) comparable in content and in number of credit hours with that granted by the University of Illinois at Urbana-Champaign. Also applicants must have an admission average of at least 4.0 (A = 5.0) computed from the last 60 hours of undergraduate work and any graduate work completed. Meeting these minimum admission requirements of the Graduate College, however, does not guarantee admission; individual departments may set a minimum grade-point average higher than that of the Graduate College and may impose other special admission requirements and conditions. Because applicants to most departments compete for a limited number of positions, many who exceed minimum requirements may be denied admission.

Applicants for admission to the Graduate College with undergraduate academic records showing "pass," "satisfactory," "credit," or other similar entries in advanced courses which have a bearing on the student's field of specialization should submit a written evaluation or a letter grade by the instructor in each such course along with scores on the Graduate Record Examination. Because some departments have special examination requirements, applicants should check with their departments; for example, accountancy and business administration use the Graduate Management Admission Test instead of the Graduate Record Examination.

Prospective students are urged to apply for admission as early as possible, preferably in November or December for the summer session and fall semester, and September or October for the spring

semester. Under no circumstances will applications be accepted during the three weeks preceding the beginning of a term.

Application forms may be obtained from the major department or the Graduate College, 330 Administration Building, 506 South Wright Street, Urbana, Illinois 61801. A nonrefundable application fee of $20 must accompany the application.

International applicants must submit official records of all higher educational training, including certificates of degrees with the dates the degrees were conferred. International applicants must submit evidence of financial support as a condition of admission.

Eligible applicants whose native language is not English must take the Test of English as a Foreign Language (TOEFL) given several times a year throughout the world. Applicants should make arrangements directly with the Educational Testing Service, Box 899, Princeton, New Jersey 08541, U.S.A. Graduate applicants, however, are exempt from this testing if, immediately prior to their proposed term of enrollment, they have completed at least two academic years of full-time study in a country where English is the primary language and in a school where English is the primary language of instruction.

The University requires a score of at least 520 on the TOEFL examination and some departments require higher scores. All nonnative, English-speaking applicants to the Graduate College who are offered admission on the basis of their academic credentials but score below 590 on the TOEFL or fail to submit a required TOEFL score, will be admitted on limited status and be required to take the English Placement Test (EPT) upon their arrival.

Notices of Admission

Each student offered admission into a graduate department is admitted as either a degree candidate or a nondegree student. Following admission, the Office of Admissions and Records issues a Notice of Admission to the student. This notice allows the student to begin studies in a specific term; applicants desiring a change in this term of entry are required to file another application and pay an additional processing fee unless the major department formally requests the Office of Admissions and Records to waive these requirements. Exceptions to this rule are that a Notice of Admission for the summer session not marked "Summer Only" is valid for the following fall semester, and that a Notice of Admission for the fall semester is also valid for the preceding summer session.

Specific conditions of admission may be noted on the Notice of Admission and, when needed, explained further in communication

from the major department. Admitted students may be placed on limited status if their preadmission grade-point average is below the Graduate College minimum. Major departments may also admit students on limited status on the basis of other deficiencies. Students admitted on limited status should have a clear understanding with their major department concerning what conditions must be satisfied to qualify for a change from limited to full status. The major department should request the Graduate College Student Records Office to change the student from limited to full status once the specific conditions have been satisfied. No student can receive an advanced degree while on limited status.

The Notice of Admission may also indicate transcripts which are still outstanding. All admitted students are required to provide complete credentials to the Office of Admissions and Records prior to the beginning of their second term of registration or such registration will not be permitted. Newly admitted students should bring their Notice of Admission with them the first time they go through registration.

ENROLLMENT PATTERNS

All campus students enroll in one of two enrollment patterns: (1) continuous — enrollment is expected in the fall and spring semesters with summers optional; or (2) summers only — enrollment is expected only in the summer session. Once established, the pattern of enrollment may not be broken without prior approval from the Graduate College for a leave of absence or prior permission from the Office of Admissions and Records to change the enrollment pattern. Graduate students who break their patterns of enrollment without prior approval must apply for readmission in order to resume their studies.

NONDEGREE STATUS

Persons who want to do graduate-level study but who do not plan to pursue a graduate degree may apply for admission as nondegree graduate students. The same minimum admission standards apply as for degree candidates. Qualified nondegree applicants are admitted to take courses on a part-time basis subject to the availability of space. Once accepted for admission by a department and the Graduate College, a nondegree student has the same enrollment pattern options for continuous registration as a degree candidate. Either the major department or the Graduate College, however, may dis-

continue the nondegree status of a student at the end of any term. Failure to register in a fall or spring semester after admission necessitates reapplication should later enrollment be desired.

There are several restrictions which apply to nondegree status. Nondegree students:

1. Are not eligible to advance enroll.
2. Cannot register until after the third day of classes of the fall or spring semester. The late registration fee will be waived if the student completes registration on or before the tenth day of instruction in a semester.
3. Are required at the beginning of each term to have approval of both their home department and the department offering the course in which the nondegree student wishes to enroll.
4. Are limited to taking fewer than 3 units per semester.
5. Are not eligible for financial aid administered by the Graduate College.
6. Must reapply if they wish to acquire degree status. If later approved for degree status, a maximum of 3 units of nondegree credit may be applied to a degree, and then only after successful petition to the Graduate College.

Nondegree students who wish to study only during the summer session are not assigned to a particular department, but carry an unassigned status with the Graduate College. These students are allowed to register continuously from summer to summer until their pattern of enrollment is broken.

REGISTRATION

Currently enrolled students should advance enroll for the following semester and complete their registration by mail. New and other students who have not advance enrolled should meet with their advisers and make up their schedules before going through on-campus registration which occurs during the week preceding the start of instruction in a semester.

There is a $15 fee for late registration. (It is possible to be assessed a late fee up to $50 depending on nonpayment of fees by deadlines.) If, however, failure to complete registration during the regular period is in some way the fault of the University or there are extenuating circumstances such as severe illness or hospitalization, a student may petition the Records Office of the Office of Admissions and Records, 69 Administration Building, 506 South Wright Street, Urbana, Illinois 61801, for a waiver of the fee.

TUBERCULOSIS CONTROL

All new, transfer, and readmitted students are encouraged to present evidence of freedom from tuberculosis at the University's McKinley Health Center. Proof of freedom from tuberculosis is necessary for some students, such as new teaching assistants and those who have jobs handling food. International students are required to have a chest X-ray at the Health Center before completing registration. Freedom from tuberculosis is established by presenting evidence in the form of a University of Illinois or public health agency certificate dated within the previous twelve months, or by undergoing a tuberculin skin test at the McKinley Health Center that is read negatively at the Health Center within forty-eight to seventy-two hours after application.

TUITION AND FEES

Since tuition and fees are subject to change, it is difficult to provide exact information. Tuition and fees are assessed on the basis of a student's status (resident or nonresident of Illinois), college of enrollment, and the number of credit hours taken each term. In computing fees, 1 unit is equivalent to 4 semester hours. A complete schedule of fees and an explanation of the eligibility requirements for full or partial exemption are available from the Tuition and Fee Assessment Section, 69 Administration Building, 506 South Wright Street, Urbana, Illinois 61801.

Residency for Tuition Assessment

Tuition is assessed on the basis of whether a student is a resident or nonresident of the state of Illinois in accordance with the *University of Illinois Regulations Governing the Determination of Residency for Admissions and Assessment of Student Tuition.* These regulations are published in the *Code on Campus Affairs and Regulations Applying to All Students* which is offered to all students during on-campus registration and is available at the Post-Registration Service Center in the Illini Union. The residency regulations and petitions for changing a student's status are available on request from the Office of Admissions and Records, 177 Administration Building, 506 South Wright Street, Urbana, Illinois 61801.

Generally, in order to be considered a resident for assessment of tuition, a person must have been a bona fide resident of the state of Illinois for at least six consecutive months immediately preceding the beginning of any term for which he or she registers and must continue to maintain a bona fide residency in Illinois. If an adult stu-

dent has at least one parent who is a bona fide resident of Illinois, this six-months continuous residency rule is waived so long as the student resides in Illinois during the period of registration at the University.

Staff members of the University and allied agencies, including teaching and research assistants on appointment for at least 25 percent of full-time services as well as their spouses and dependent children, are treated as residents for tuition assessment purposes as long as they hold their appointments. Professional staff and teachers in private or public elementary and secondary schools in Illinois are also eligible for in-state tuition charges. Persons serving on active duty in one of the armed forces of the United States who are stationed and present in the state of Illinois, their spouses, and dependent children may qualify upon petition for the in-state tuition rate. A student who is a U.S. citizen or a permanent resident also may qualify upon petition for resident status if he or she is married to a resident of Illinois who meets all the requirements of the residency regulations.

Installment Plan for Payment of Charges

Students enrolled on campus may elect to pay tuition, service fees, insurance, health service, flight instruction, and University residence hall charges (single-student housing only) in three approximately equal installments. The first installment is payable by the due date shown on the Post-Registration Statement (within the first ten days of classes), the second is payable in October (March for spring semester), and the third in November (April for spring semester).

Students electing the installment plan are assessed a finance charge of one percent of the amount deferred or a minimum of $2.00, whichever is greater. Deferred installments and other charges billed through the student accounts receivable system are subject to a delinquent service charge of one percent per month ($1.00 minimum) on any amounts not paid when due.

Refunds

Students who have not attended any classes nor received any student services may cancel their registration agreement by 5 p.m. on the first day of class in a term if they obtain the approval of the Dean of the Graduate College. Students will not be charged tuition and fees if their registration is cancelled.

If withdrawal from the University occurs during the first ten days of instruction in a semester or during the first seven days in the eight-week summer session, tuition and a portion of fees will be refunded.

The University will refund tuition but retain one-half of the service fee and all of the McKinley Health Service fee and the health insurance fee. Health services and insurance coverage for students continue until the end of the term. The last day for this partial refund is noted in the *Graduate College Calendar* and in the calendar printed in each semester's *Timetable.* In cases of serious illness or injury, exceptions to these refund periods may be made by the director of admissions and records. Special refunds are provided for students who withdraw for military service after this ten or seven-day period. If it is necessary to withdraw from the University and there is a question concerning a refund, a student should first inquire in the Graduate College Student Records Office, 321 Administration Building, 506 South Wright Street, Urbana, Illinois 61801.

FINANCIAL AID

Financial aid is available in the form of fellowships, tuition and fee waivers, teaching and research assistantships, college work-study programs, and loans.

Application Procedure for Fellowships, Assistantships, and Tuition and Fee Waivers

A single Application for Graduate Appointment submitted by a continuing student to the major department ensures consideration for fellowships, tuition and fee waivers, and departmental assistantships. A new student wishing to be considered for these appointments should complete the combined Application for Admission or Readmission to the Graduate College and Application for Graduate Appointment. Forms can be obtained from the Graduate College or from the departments.

Applications should be filed by February 15th or earlier. Some departments have earlier deadlines for fellowships; other departments, at their own discretion, accept applications for assistantships and tuition and fee waivers after the February 15 deadline. Most financial aid decisions, however, are made in February and March and the first list of fellowship awards is usually announced in mid-March.

Departmental committees recommend students for fellowships or tuition and fee waivers to the Graduate College for approval. Each department selects its own teaching or research assistants. Fellowships and waivers can be awarded only to students who are enrolled in or have applied for admission to the Graduate College as degree candidates.

Financial need is not a factor in awarding fellowships, tuition and fee waivers, or assistantships administered by the University.

Fellowships

University Fellowships. Students in all fields of graduate study are eligible to compete for University Fellowships, which are awarded on the basis of academic and scholarly achievement. A student need not be a U.S. citizen to apply. Departments (with Graduate College approval) may combine University Fellowship stipends with teaching or research assistantship appointments. Students should consult their departments about the pattern of available support.

Graduate College Fellowships. These fellowships are part of the Graduate College's effort to increase the enrollment of minority group students in those academic areas where they have been traditionally underrepresented. Graduate College Fellowships are often awarded to students who are beginning graduate work so that they can devote their first year entirely to study. The stipend is $4,500 for twelve months with tuition and fees waived.

Most Graduate College fellows are given support in the form of other fellowships and assistantships with which to continue their studies in subsequent years, provided their progress is satisfactory during their first year; however, continued support cannot be guaranteed in advance. Graduate College permission is required for concurrent employment of any type.

Federal Fellowships. These fellowships have been curtailed sharply in recent years but certain programs, principally in science and education, have been maintained. Applicants for most federal fellowships must be U.S. citizens or permanent resident aliens; some programs are restricted to U.S. citizens.

Industrial, Endowed, and Special Fellowships and Traineeships. A number of firms, foundations, and individuals support fellowship awards for graduate students. The stipends and supplemental allowances for these fellowships vary, and most of them are restricted to students in particular areas of study. In almost all cases, these awards provide tuition and most fees. Information on applying for these fellowships and traineeships may be obtained from the Graduate College Fellowship Office.

Fellowships Awarded by Competition. A few foundations and agencies hold fellowship competitions on a small scale and are usually restricted to specific groups such as the Committee on Institutional Cooperation fellowships for minority group students, the American Association of University Women fellowships, or those of the Honor Society of Phi Kappa Phi. Information on these and other fellowships is available early each fall in the Graduate College Fellowship Office.

Assistantships

General Information. The various departments of the University appoint graduate students as teaching or research assistants. Application should be made directly to the appropriate department, using the Application for Graduate Appointment. To receive and hold an assistantship, a student must be legally registered for the term(s) of employment. Assistants holding appointments ranging from 25 through 67 percent time are exempt from tuition and the service fee, but not from the McKinley Health Service and health insurance fees. For students holding such appointments or fellowships covering tuition and fees through the spring semester, the tuition and service fee exemption generally extends through the summer session unless they hold summer appointments of less than 25 percent or more than 67 percent. As an additional benefit, spouses and dependent children of staff members having an appointment of at least 25 percent are treated as residents for purposes of tuition assessment. Students may also apply for part-time assistantships outside their major department in one of the nonteaching units of the University, such as the Survey Research Laboratory.

Part-time appointments as student residence hall advisers are available as well. These jobs provide room and board and the same exemption from tuition and the service fees accorded to other assistants. The student affairs coordinator for staff development in the Housing Division has applications for residence hall adviser appointments.

Resignations. Students who resign their appointments before working for at least three-fourths of the term (ninety-one days during the regular semesters, forty-one days during the summer session) will be assessed tuition and fees unless they withdraw from the University at the same time or before an appointment becomes void, or they file a clearance form for graduation within one week following the resignation date. A term is defined as running from the first day of registration through the last day of final examinations.

Tuition and Service Fee Waivers

In addition to the tuition and service fee waivers which accompany fellowships and assistantships, a number of waivers are awarded by the Graduate College each year. These waivers provide exemption from the tuition and service fee (but not from the health service or student insurance fees) for the academic year and the summer session immediately preceding or following that year. To hold a waiver, a student must register for at least 3 units each semester during the

academic year and 1½ units in the summer session. While holding a waiver, the student may accept part-time or incidental employment not to exceed twenty hours per week either with the University or with outside agencies.

Veterans who meet certain residence requirements may be eligible for exemption from tuition under the state statute concerning military scholarships. Further information may be obtained from the Student Financial Aid Office, Fred H. Turner Student Services Building, 610 East John Street, Champaign, Illinois 61820.

Loans and College Work-Study

Students may request information about National Direct Student Loans, state and federally guaranteed loans, and College Work-Study from the Student Financial Aid Office.

Students may also apply for guaranteed loans through lenders in their hometowns who participate in one of the various guaranteed loan programs.

In addition to major educational loans, the University makes special funds available. Graduate students with cash flow problems should go to the Office of the Dean of Students where they may be eligible for either short- or intermediate-term loans.

Student Employment

Part-time jobs are sometimes available for graduate students through the Student Financial Aid Office's student employment division.

GRADUATE COLLEGE REQUIREMENTS

Graduate Degrees

The following are the general requirements of the Graduate College. The *Handbook for Graduate Students,* which is distributed to all graduate students enrolled at the University of Illinois at Urbana-Champaign, gives the requirements in more detail. Graduate students should use it as the official statement of Graduate College regulations during their graduate study on the Urbana-Champaign campus. Departments may have requirements that apply in addition to those of the Graduate College. A departmental standard higher than that of the Graduate College (e.g., the minimum grade-point average for degree eligibility) replaces the Graduate College standard.

Departmental and Graduate College policies and requirements change from time to time, and may not be immediately reflected in handbooks and other publications. New degree requirements, however, cannot be imposed on continuing graduate students. If degree

requirements are changed, continuing students may complete their degree programs under the requirements in effect at the time of their initial admission and enrollment in the Graduate College. They have the option, however, of electing to be governed by the new requirements if they so desire.

A graduate student may not be awarded more than two graduate degrees from the University of Illinois at Urbana-Champaign without prior approval from the Graduate College.

Grading System

Final Grades. Final grades for courses are recorded as follows: A, B, C, D (lowest passing grade), and Ab or E (failure). The grade-point average (GPA) is computed on a five-point scale with A = 5.0. Plus and minus signs do not appear on a graduate student's official transcript and are not used in computing the GPA, but they may be recorded on department transcripts.

Other symbols used, but not included in the computation of the GPA are:

W — Officially withdrawn from a course.

Ex — Temporarily excused. An extension of time granted by the instructor to a student who has not completed the final examination or other requirements for the course. An excused grade must be replaced by a letter grade no later than the end of the next term in which the student is enrolled. Failure to complete the work within this time automatically results in a grade of E by rule. If the student does not enroll the following term, the excused grade becomes an E by rule after one calendar year.

Df — Grade temporarily deferred. Used only in research and other approved courses which extend beyond one term. The time limit for the Df grade to revert to E by rule is the same as for the Ex grade except in regard to the thesis research course (499).

S or U — Satisfactory or unsatisfactory. Used as final grades only in the thesis research course (499) and in certain other approved courses.

CR or NC — Credit or no credit. Used only if students have registered for a course under the credit–no credit option with the approval of their major departments.

Ab — Absent from the final examination without an acceptable excuse. This grade counts as a failure.

Credit–No Credit Option. Subject to the restrictions of their major department and with their adviser's approval, students may register for graduate credit under the credit–no credit option. They must, however, have at least 2 units of course work in their graduate program with grades of A through C for every unit of credit–no credit work.

GPA Computation. A registered student's GPA is computed at the end of every term and reported in the Semester Grade Report which is mailed to the student about ten days after the final day of examinations. The GPA includes units of course work with grades of A through E and Ab but not those with grades of CR, MC, Ex, Df, S, and U. The GPA does **not** include courses taken for semester hour credit (for example, physical education courses); nor does it include course work transferred from other universities or colleges with the exception of the Chicago campus of the University of Illinois. If a grade below C is received, a student should check with his or her adviser or department to see if the course must be repeated (a student may also choose to repeat a course). In either case, the repeated courses are ignored in the computation of a graduate student's GPA and the accumulated credits toward a degree.

Minimum GPA. Students are required by the Graduate College to maintain a minimum GPA of 3.75 in order to continue in an advanced degree program. Many departments, however, demand a minimum of 4.0 or higher, and when they do, their minimum becomes the minimum enforced by the Graduate College.

Students who complete 3 or more units of graded course work with an average of less than the minimum will receive a warning letter from the Graduate College. If after the completion of 3 additional units of graded course work, a student's GPA has not been raised to or above the required minimum or if the GPA falls below it at any time thereafter, the student will be placed on limited status. If the student's average does not meet the minimum requirement at the end of the first term on limited status, he or she will be prohibited from further registration.

Advisers and departments take factors other than satisfactory grades into consideration in determining qualifications for advanced degrees. An adequate GPA does not in itself ensure continuance in an advanced degree program. Records maintained by departments often record deferred and plus and minus grades as well as written evaluations by instructors. These factors along with other skills and aptitudes are taken into consideration in departmental decisions about permitting students to continue in master's and doctoral programs.

Credit

Graduate Credit. Graduate credit at the University of Illinois at Urbana-Champaign is measured in terms of units with 1 unit equal to approximately 4 semester hours. Generally, courses in the 300 series carry graduate credit and are open to both graduate and undergraduate students. Courses in the 400 series, with the exception of some courses such as foreign language, carry graduate credit. Enrollment in these courses is restricted to graduate students.

Proficiency Examinations. Credit earned by passing proficiency examinations cannot be applied to the requirements for advanced degrees, but such examinations may be taken to fulfill prerequisites for more advanced courses or to demonstrate competence in areas considered important to a student's area of study. Proficiency examinations will be recorded only if the student is registered at the time of the examination. These examinations are usually given without cost to the student, but a fee may be charged to defray the cost of examinations prepared by agencies outside the University. Students should consult their advisers before applying for proficiency examinations.

Credit for Work Completed Elsewhere. Students who have completed graduate work elsewhere within the last five years but have not received advanced degrees, may request the credit earned for that work be applied to a degree at the University of Illinois at Urbana-Champaign. Requests for acceptance of such credit may be submitted on petition forms accompanied by official transcripts after the student has successfully completed at least 2 units of graduate work on the Urbana-Champaign campus. Credit for a master's degree completed at the University of Illinois or at another institution cannot be used as partial fulfillment of the requirements for a second master's degree. If a student has earned a master's degree at another university and then completed additional course work before enrolling at the University of Illinois, that student may petition to transfer credit for that additional work provided, of course, that it was done at an accredited institution. Students having a master's degree are considered to have completed the first stage of their doctoral program unless their department stipulates otherwise. It should be stressed, however, that all doctoral condidates, regardless of transfer credits or a master's degree completed elsewhere, must complete 16 units in residence on the Urbana-Champaign campus or in courses meeting in other locations which have been approved by the Graduate College for residence credit.

Research Credit and 499. The time devoted to research is recorded by registration in 499 (thesis credit) or in 400-level courses with such

titles as "Independent Study" or "Special Topics." Registration in 499 indicates that the student's research is expected to result in a thesis in partial fulfillment of the requirements for a master's or doctoral degree. Therefore, all students registering in 499 should do so only with full departmental approval. Registration in 499 is required if a thesis is being completed as a degree requirement.

Extramural Courses. Graduate courses are offered by members of the University faculty at various centers throughout the state. Pamphlets listing these courses can be obtained from the Office of Continuing Education and Public Service. Certain extramural courses may be considered as work in residence if they are approved for residence credit by the department offering the course and by the Graduate College. Credit earned in extramural courses can be applied toward an advanced degree only if the courses are approved in advance by the adviser and constitute part of a well-integrated program. At least half of the minimum units required for a master's degree must be earned in courses meeting on the Urbana-Champaign campus or in courses approved for residence credit. Credit for extramural courses not approved for residence credit cannot be applied to the second stage of a doctoral program.

Correspondence Courses. Credit for correspondence courses cannot be applied toward an advanced degree but can be used to fulfill prerequisites or remove deficiencies. A list of correspondence courses is available from the Office of Continuing Education and Public Service.

Requirements for the Master's Degree

The Graduate College requires a minimum of 8 units of credit for the master's degree. At least 3 units must be in 400-level courses, and 2 of these 3 units must be in the major field. Half or more of the credit applied toward the degree must be earned in courses meeting on the Urbana-Champaign campus, the Chicago campus, or in courses meeting in other locations and approved by the Graduate College for residence credit. Master's degrees are conferred in May, August, October, and January. Master's candidates must complete all degree requirements, under normal circumstances, within five years after their first registration in the Graduate College.

Some departments require a final examination for the master's degree. Individual departments also determine master's degree thesis requirements. Some departments require or recommend a thesis, but others ask for a "substantial research paper," or only require the minimum 8 units of course work. Thesis credit is earned

in courses numbered 499 in each department. No more than 3 units of 499 can be applied to the master's degree and in some departments only 2 units.

Requirements for the Doctoral Degree

Credit and Residence. Doctoral programs are divided into three stages, as described below, and must include a minimum of 24 units of credit. At least 16 of the units, including thesis credit, must be earned in courses meeting on the Urbana-Champaign campus, at the Chicago campus, or in courses meeting in other locations which have been approved by the Graduate College for residence credit. After the residence requirement has been fulfilled, a student who plans to leave campus may petition the Graduate College for permission to register in absentia for thesis credit.

Stage I — The master's degree or its equivalent (8 units, or 32 semester hours, of acceptable graduate work at this or another university).

Stage II — One or more additional years devoted to course work and research in preparation for the preliminary examination, and fulfillment of the department's special requirements, if these have not been satisfied earlier. Each department has a procedure for evaluating a student's progress toward the doctorate. This evaluation, whether by examination or other formal review, results in a decision as to whether or not a student is making satisfactory progress. This decision will be communicated in writing to the student and to the Graduate College. Such evaluation will take place no later than the end of the second year after a student enters the Graduate College. In some departments, this evaluation may take the form of a qualifying examination which a student must pass before entering Stage II of a doctoral program. Passing the preliminary examination marks the end of Stage II.

Stage III — Research and other activities culminating in an approved dissertation and final oral examination. Continuous registration, excluding summer sessions, should be maintained until a student has completed the credit requirement for the doctoral degree. If a student at this stage cannot maintain continuous registration, he or she must apply for readmission in order to continue doctoral study. Registration in 499 (thesis credit) is also required for the term in which a student takes the final examina-

tion, regardless of when the thesis will be deposited with the Graduate College or when the degree will be conferred.

Time Limit. Doctoral candidates must complete all degree requirements within seven years after their initial registration in the Graduate College. Those entering directly into Stage II, with a master's degree from another university or with a significant lapse of time since earning a master's degree on this campus, have six years in which to complete degree requirements.

Foreign Language Requirement. Each department establishes its own foreign language requirement; some allow for substitution of research skills in computer programming language or statistical analysis.

Preliminary and Final Examinations

Preliminary examinations taken at the end of Stage II of doctoral programs may be oral, written, or both, depending on the department's policy. Final examinations are oral and public.

The dean of the Graduate College appoints doctoral committees, at departmental request, to administer preliminary and final examinations. These committees must be composed of three or more members of the graduate faculty.

Decisions of the committees for both preliminary and final examinations must be unanimous. Departments outline their policies regarding preliminary and final examinations as part of the descriptions of their advanced degree programs and requirements which are distributed to graduate students in the department.

Theses

All candidates for the Ph.D. and candidates for most other doctoral degrees are required to write a thesis. Individual departments may have special requirements in this respect. In addition, all completed theses must be acceptable for deposit in the Graduate College; a thesis that fails to meet Graduate College standards will be rejected. The thesis must be the work of a single author.

Before the degree is conferred, a student may find it desirable or expedient to publish some of the findings which will later be incorporated in the thesis. If this is done, an appropriate acknowledgment of the earlier publication should be included in the thesis. The Graduate College encourages such publication, but the thesis may not be published in its entirety before all degree requirements have been met.

If thesis research involves the use of human subjects, warm-

blooded animals, the use of hazardous materials or procedures, or the utilization of PLATO services, the student must comply with the University's policies and procedures governing such work.

The Graduate College cannot accept a thesis if it is accompanied by a request to remove it from public view, and it will deny any request to remove from public view a thesis which has already been accepted.

Advanced Certificate

Some departments, such as those in the College of Education and the Graduate School of Library and Information Science, offer advanced certificates for those students who are interested in additional professional training beyond the master's degree but who are not planning to obtain the doctorate. These programs usually require the completion of 8 units of course work beyond the master's degree. Information concerning specific advanced certificate programs is available from departmental offices.

PROGRAMS OF STUDY

The graduate programs offered by the Graduate College, through the various divisions, schools, institutes, centers, and departments of the University of Illinois at Urbana-Champaign, are described on the following pages. Areas of specialization within these programs are described. Included also are the offerings of several interdisciplinary areas of concentration, such as population studies, environmental studies, American civilization, and African, Asian, Russian, and Latin American area studies, among others.

The minimum requirements for admission and other requirements for graduate degrees are given for each program. The prospective student is reminded that he or she is seeking admission to the Graduate College of the University of Illinois at Urbana-Champaign, and may not be admitted to the college or to a particular academic department offering programs leading to advanced degrees without satisfying the admission requirements of both. Likewise, both departmental and Graduate College requirements must be met before an advanced degree is awarded by the University of Illinois at Urbana-Champaign. If departmental requirements are higher than the minimum Graduate College requirements, e.g., for continuation in a graduate degree program and the awarding of the degree, the higher standard applies.

The University of Illinois at Urbana-Champaign *Courses Catalog,* published biennially, lists all the undergraduate and graduate courses offered at the Urbana-Champaign campus. A listing of courses offered each term is published in the *Timetable,* issued in April for the fall semester, in March for the summer session, and in October for the spring semester. Copies of the *Courses Catalog* and *Graduate Programs* catalog are for sale through the Illini Union Bookstore, 715 South Wright Street, Champaign, Illinois 61820. The price by mail is $2.75 for each catalog. The *Timetable* is available free of charge at the information desk of the Illini Union. The graduate application for admission packet is available free of charge from the Graduate College, 330

Administration Building, 506 South Wright Street, Urbana, Illinois 61801.

ACCOUNTANCY

Head and Director of Graduate Studies: F. L. Neumann

Correspondence and Information: Head of the Department of Accountancy, University of Illinois at Urbana-Champaign, 360 Commerce Building (West), 1206 South Sixth Street, Champaign, Illinois 61820

GRADUATE FACULTY

Professors: N. M. Bedford, G. D. Brighton, H. P. Holzer, O. E. Johnson, R. Manes, J. C. McKeown, F. L. Neumann, H. M. Schoenfeld, C. H. Smith, V. K. Zimmerman

Associate Professors: R. Boland, W. S. Hopwood, J. J. Schultz, E. Willis, R. E. Ziegler

Assistant Professors: C. E. Brown, J. S. Chandler, J. Eichenseher, T. J. Frecka, R. Greenberg, K. Hreha, R. W. Jamison, S. Kim, D. Nitterhouse, S. H. Park, R. F. Sharp, P. A. Silhan

Graduate Degree Programs. The Department of Accountancy offers graduate work leading to the degrees of Master of Accounting Science and Doctor of Philosophy in Accountancy. For graduates of business schools with credit in appropriate undergraduate courses, the M.A.S. degree requirements can be completed in one year. For nonbusiness graduates, the M.A.S. degree can be earned in two years. The Ph.D. degree takes approximately three to four years of full-time study and research.

Admission. All applicants, native or foreign, are required to take the Graduate Management Admission Test. This test should be taken early enough to ensure that the results will be available to the department prior to action on admission. The admission requirements of the Graduate College also apply.

Master of Accounting Science. The Master of Accounting Science degree provides a two-year program for those with little or no background in accounting or as little as one year's study for those who wish to expand on their undergraduate degree in accountancy or other business fields. All candidates are required to complete at least 8 units of course work. At least 3 units must be at the 400 level; 4 units must be in accounting; and of these 4 units, 3 are specified and 1 is elective. The remaining 4 units are general electives available for meeting the individual student's plans. For example, the student may use some or all of them to develop an area of specialization, such as auditing, taxation, information systems, financial accounting, managerial accounting, not-for-profit accounting, and international accounting. A student's program is individually developed in consultation with a faculty adviser. No thesis is required, although the student may elect to write one.

To be eligible to complete the M.A.S. program in 8 units, a student should have completed an equivalent of the undergraduate curriculum in accountancy at the University of Illinois at Urbana-Champaign including the following: at least 21 hours of undergraduate work in accounting; a course in general economic theory, in microeconomic theory, in computer programming and applications, and in the functional fields of business; two courses in statistics; and courses in finite mathematics and calculus.

A student with little or no business and accounting background is required to complete up to an additional 8 units of work. In the first year of this two-year program, a student takes four specified graduate courses in accountancy. Depending upon his or her background, the student also enrolls in courses in statistics, economics, mathematics, computer programming, and the functional areas of business. A student who already meets any of the requirements of the two-year program receives

some credit toward the total 16-unit requirement. In the second year, the requirements are those for all M.A.S. students, as described above.

Doctor of Philosophy. Applications for admission to the doctoral program, supported by three letters of recommendation, must be approved by the department admissions committee, which may require an oral or written examination. For students with a bachelor's degree and adequate background in appropriate areas, the requirements for the Doctor of Philosophy degree include the following: credit in micro- and macroeconomics; two courses in statistics, one in organization behavior, and two in research methods and techniques; a minor of at least 3 units other than accountancy; at least 6 units of accountancy; and the thesis. The student's doctoral program is determined in consultation with a faculty advisory committee. The student's tentative plans for the doctoral thesis serve as a guide in planning the program.

In addition, the candidate must pass written and oral preliminary examinations, and an oral final examination on the doctoral thesis. In the preliminary examinations, the candidate must demonstrate a thorough knowledge of accounting theory in both its external and internal dimensions, of research methods, and of the areas of accountancy in which he or she specialized; a general acquaintance with the subject matter and bibliography of other areas of accountancy; and proficiency in a minor field and the required areas of economic theory, quantitative methods, and organization theory. Although teaching is not a general Graduate College requirement, experience in teaching is considered a vital part of the accountancy graduate program and is required as a part of the academic work of all Ph.D. candidates in the department.

CENTER FOR INTERNATIONAL EDUCATION AND RESEARCH IN ACCOUNTING

The Center for International Education and Research in Accounting is functionally and administratively part of the Department of Accountancy. The center's objective is to foster the international development of education and research in the accounting discipline, to provide a base for the international exchange of ideas and materials, to carry out research programs of international interest, and to help accounting faculty and students from other countries come to the University of Illinois at Urbana-Champaign for study and research in accountancy.

ADVERTISING

Head of the Department: A. M. Barban
Correspondence and Information: Head of the Department of Advertising, University of Illinois at Urbana-Champaign, 119 Gregory Hall, 810 South Wright Street, Urbana, Illinois 61801

GRADUATE FACULTY

Professors: A. M. Barban, K. B. Rotzoll
Associate Professors: J. E. Haefner, J. D. Leckenby
Assistant Professor: K. M. Lancaster

Graduate Degree Program. The Department of Advertising offers graduate work leading to the Master of Science degree. For the program leading to the Doctor of Philosophy in Communications, see page 84.

Admission. Admission to graduate study in advertising requires completion of the requirements for a bachelor's degree in an accredited institution of recognized standing. All applicants are required to submit results from either the Graduate Record Examination or the Graduate Management Admission Test and are required to attach to their applications a short essay indicating why they want to take graduate work in advertising. The Graduate College admission requirements also apply.

Master of Science. Candidates for the M.S. degree must complete at least 9 units, of which at least 4 are 400-level courses. These will include at least 5 units of course work in advertising, including Advertising 481, 482, and either 483 or 484. A minimum of 2 units must be taken outside the Department of Advertising. Students with an undergraduate major in advertising can usually earn the M.S. degree in one academic year and one summer session if they take a full course of study. Applicants without an undergraduate major in advertising may be required to take up to nine additional background courses in addition to the 9 units.

At the time of admission, students will be advised of the probable number of units required for graduation. At the time of registration advising, students will be informed of the exact number of units needed to fulfill the M.S. requirements.

AERONAUTICAL AND ASTRONAUTICAL ENGINEERING

Head of the Department and Director of Graduate Studies: H. H. Hilton
Correspondence and Information: Director of Graduate Studies, Department of Aeronautical and Astronautical Engineering, University of Illinois at Urbana-Champaign, 101 Transportation Building, 104 South Mathews Avenue, Urbana, Illinois 61801

GRADUATE FACULTY

Professors: C. E. Bond, H. H. Hilton, C. O. Hopkins, Y. K. Lin, A. I. Ormsbee, J. E. Prussing, L. H. Sentman, R. A. Strehlow, S. M. Yen, A. R. Zak
Associate Professors: H. O. Barthel, K. R. Sivier
Assistant Professors: B. A. Conway, A. L. Hale

Graduate Degree Programs. The Department of Aeronautical and Astronautical Engineering offers graduate programs leading to the degrees of Master of Science and Doctor of Philosophy. Study and research are planned to prepare graduates for fundamental and applied work in airplane, missile, and space flight engineering. Students interested in mass transportation and deep-sea submergence vehicles, for example, find graduate study in this department applicable. Typical areas of concentration are aerodynamics, aeroelasticity, space mechanics, flight mechanics, propulsion, structural mechanics, optimization and control, manual control and display systems, human factors in aerospace systems, and air and noise pollution.

Admission. The prerequisite for graduate study normally is the equivalent of the undergraduate courses required at the University of Illinois at Urbana-Champaign for a bachelor's degree in aeronautical and astronautical engineering; however, graduates of curricula leading to degrees in other fields of engineering, the physical sciences, or mathematics may also be admitted to advanced study. Admission requirements of the Graduate College apply.

Master of Science. Candidates for the degree of Master of Science are required to complete a minimum of 8 units of graduate work, including a thesis. At least 3 units must be in 400-level courses, and 2 of these 3 units must be in aeronautical and astronautical engineering. It is possible for a student with a one-half time appointment to complete the requirements for the M.S. degree in two semesters and a summer session, or in three semesters.

Doctor of Philosophy. Because of the wide range of interests in the field of aeronautical and astronautical engineering, there are no specific course requirements for a major in the program of study leading to the degree of Doctor of Philosophy. Each student plans a program in consultation with a departmental adviser. Courses offered by departments other than the Department of Aeronautical and Astronautical Engineering may be included in the major area of study when these courses are of particular value to the work that students desire to emphasize. The major and

minor programs must meet with the approval of the head of the department. Minimum requirements for the degree consist of 8 units of course credit beyond the master's degree, successful completion of the preliminary examination, and a satisfactory thesis developed from 8 units of thesis research. A reading knowledge of one foreign language is optional. Students who do not elect the foreign language option must complete a minimum of 18 units of course work for the Ph.D. degree.

AFRICAN STUDIES PROGRAM

Director of Graduate Studies: C. C. Stewart

Correspondence and Information: Director of the African Studies Program, University of Illinois at Urbana-Champaign, 1208 West California Avenue, Room 101, Urbana, Illinois 61801

GRADUATE FACULTY

Professors: C. Alexander, M. Davis, J. F. Due, J. M. Due, J. Harlan, J. Karr, M. Kenstowicz, C. W. Kim, C. Kisseberth, A. Peshkin, V. West, G. Yu

Associate Professors: E. Accad, D. Crummey, C. Keller, E. Kellogg, Y. Scheven, R. Schoen, A. Sofranko, C. Stewart, C. Weller, B. Yates

Assistant Professors: E. Bokamba, S. Bunker, A. Glaze

Graduate Degree Programs. Graduate minors in African studies are administered by the director of the African Studies Program. African studies graduate programs complement and supplement major work which students carry out within their primary disciplines. Application for admission to graduate study should be made through the appropriate department.

Minor for the Master's Degree. A candidate for the master's degree who elects African studies as a minor must secure approval from the program and must complete at least 2 units of graduate credit from the courses approved by the program. Among the fields in which courses are available are: agricultural economics, anthropology, art history, comparative literature, economics, education, French, geography, history, linguistics, political science, and sociology.

Minor for the Doctor of Philosophy Degree. A doctoral candidate who elects African studies as a minor must secure approval from the program and must earn at least 4 units of graduate credit in approved courses in at least two departments. Courses are available in the fields listed above.

Financial Aid. Each year the program is generally able to assist a limited number of students financially through graduate assistantship awards. Some Foreign Language and Area Study fellowships are normally available for students in area studies at the graduate level.

AGRICULTURAL ECONOMICS

Head of the Department: Wesley D. Seitz

Correspondence and Information: Head of the Department of Agricultural Economics, University of Illinois at Urbana-Champaign, 305 Mumford Hall, 1301 West Gregory Drive, Urbana, Illinois 61801

GRADUATE FACULTY

Professors: C. B. Baker, P. J. Barry, G. K. Brinegar, R. J. Burdge, F. Dovring, J. M. Due, D. E. Erickson, L. P. Fettig, F. C. Fliegel, T. L. Frey, H. D. Guither, H. G. Halcrow, L. D. Hill, R. A. Hinton, G. G. Judge, R. M. Leuthold, A. G.

Mueller, J. W. Robinson, S. C. Schmidt, J. T. Scott, W. D. Seitz, A. J. Sofranko, R. G. F. Spitze, E. R. Swanson, W. N. Thompson, R. N. Van Arsdall, J. C. van Es, V. I. West

Associate Professors: D. L. Good, E. D. Kellogg, M. N. Leath, D. A. Lins, S. T. Sonka

Assistant Professors: J. B. Braden, D. L. Chicoine, D. M. Conley, B. Eleveld, H. W. Everett, P. Garcia, M. R. Grossman, S. H. Johnson, K. R. Livengood, K. E. Nelson, M. E. Sarhan, R. E. Westgren, L. R. Zavaleta

Graduate Degree Programs. The Department of Agricultural Economics offers courses leading to the Master of Science and Doctor of Philosophy degrees. Areas of concentration and specialization are offered in agricultural finance, agricultural and food policy, farm management and production economics, international agricultural economics, marketing and agricultural prices, natural resource economics, quantitative and research methods, and rural community development. Rural community development has an emphasis on either agricultural economics or rural sociology.

Master of Science.

Admission. Graduate College admission requirements apply. Applicants are favorably considered for admission if they are adequately prepared for advanced study as demonstrated by their previous program of study and their scholastic record. Students having less than 12 semester hours of agricultural economics or economics may be required to take additional courses to adequately prepare themselves for graduate studies. Students who desire to specialize in rural community development with the rural sociology emphasis should have had a minimum of 6 semester hours of rural sociology or sociology.

The minimal 8-unit program must include 2 units of economics, at least 1 of which must be economic theory; 4 units of agricultural economics, including thesis credit; 1 unit in quantitative methods and research methodology that could also fulfill part of the economics or agricultural economics requirement; and 2 units of open electives. At least 4 units must be in 400-level courses, 2 of which must be agricultural economics. No more than 2 units of thesis credit may be included in the 8-unit program. The required thesis may be waived under certain circumstances. Each student is examined orally on the thesis and/or a general knowledge of his or her field to determine his or her qualifications for the master's degree.

Doctor of Philosophy.

Admission. Graduate College admissions requirements apply. Applicants with a master's degree in agricultural economics or a closely related discipline with an outstanding scholastic record are favorably considered for admission.

The doctoral candidate must complete 8 units of nonthesis courses beyond the master's degree. The total graduate program must include a minimum of 3 units in economics, including 1 unit each of micro- and macro-theory, both at the 400 level, plus 2½ units in quantitative methods and research methodology. The student must pass three written and one oral preliminary examinations, submit an acceptable thesis, and pass a final oral examination. A minimum of 16 units beyond the master's degree, including thesis credits, is required.

Financial Aid. University Fellowships and tuition and fee waivers are awarded by the Graduate College. Several fellowships are also awarded on the basis of competition among graduate students studying in departments in the College of Agriculture. In addition, the Department of Agricultural Economics maintains a number of part-time positions (usually half-time) for graduate students, most of them in research. These assistantships are offered on a competitive basis among graduate students in the departmental program. For further information and a copy of the graduate program brochure, write to the address above.

AGRICULTURAL EDUCATION

Chairperson of the Division: Paul E. Hemp

Correspondence and Information: Division of Agricultural Education, University of Illinois at Urbana-Champaign, 357 Education Building, 1310 South Sixth Street, Urbana, Illinois 61801

GRADUATE FACULTY

Professor: P. E. Hemp
Associate Professors: E. B. Russell, B. E. Swanson

Graduate Degree Program. The Master of Science program has been planned as a fifth year of work for students who have completed the requirements of the four-year agriculture curriculum for secondary teachers of agricultural occupations or its equivalent.

Admission. The program is open only to students who have received a bachelor's degree and also have a teaching certificate. The Graduate College admission requirements apply.

Master of Science. Candidates must earn 8 units: 4 units in agriculture, 2 units in education, and 2 units in electives, which may be in agriculture, education, or, in exceptional cases, in other fields. At least 3 of the 8 units must be in 400-level courses.

A minimum of 4 units must be taken in residence. A maximum of 4 of the required 8 units may be earned in extramural courses offered by the University of Illinois at Urbana-Champaign; of these 4 units, no more than 2 may be in agriculture and no more than 2 may be in education.

In order to fulfill one of the objectives of this program, that of broad general training in technical agriculture at the graduate level, the agriculture courses and electives must be selected with the approval of the adviser. In general, agriculture courses are selected from at least three subject-matter departments with no more than 3 units from any one department.

Advanced Graduate Degree Program. Students who wish to pursue work at the doctoral level with a major in agricultural education should review program descriptions and requirements listed for the Department of Vocational and Technical Education in the College of Education.

AGRICULTURAL ENGINEERING

Head of the Department: Roger R. Yoerger
Correspondence and Information: Head of the Department, Department of Agricultural Engineering, University of Illinois at Urbana-Champaign, 202 Agricultural Engineering Building, 1208 West Peabody Drive, Urbana, Illinois 61801

GRADUATE FACULTY

Professors: B. J. Butler, J. O. Curtis, D. L. Day, C. E. Goering, D. R. Hunt, B. A. Jones, Jr., W. D. Lembke, W. R. Nave, E. F. Olver, H. B. Puckett, E. D. Rodda, G. C. Shove, J. C. Siemens, R. R. Yoerger
Associate Professors: L. E. Bode, D. L. Hoag, J. W. Hummel, J. K. Mitchell, M. R. Paulsen, D. H. Vanderholm, P. N. Walker

Graduate Degree Programs. The Department of Agricultural Engineering offers the Master of Science and Doctor of Philosophy degrees.

Master of Science. Admission requirements include completion of an undergraduate program equivalent to the agricultural engineering curriculum at the University of Illinois at Urbana-Champaign with at least a 4.0 grade-point average (A = 5.0) for the terms containing the last 60 semester hours of course work. Applicants whose

native language is not English must present a TOEFL score of 570 or more (also see Graduate College minimum). Students may concentrate study in one of the areas of research specialization listed below. Supporting course work includes mathematics; computer science; statistics; engineering mechanics; civil, electrical, and mechanical engineering; agronomy; food science; and other appropriate fields. The completion of 8 units and the preparation and defense of a thesis involving an analytical or experimental investigation (which satisfies 2 units of credit) are required of all M.S. candidates except those able to document previous experience of an equivalent nature. Candidates permitted to pursue a nonthesis degree must complete a minimum of 9 units. At least 3 of the units for the M.S. degree must be in 400-level courses, and 2 of these units must be in agricultural engineering.

Doctor of Philosophy. Admission is limited to individuals who have demonstrated exceptional ability through outstanding performance in obtaining the Master of Science degree and/or through a high degree of technical and professional accomplishment. Candidates must also satisfy entrance requirements for the M.S. degree program.

Opportunities for study are found in all of the areas of specialization listed below. Candidates will be required to include course work and staff consultation from the various disciplines within the University to build strong technical programs and to fulfill the standard requirements of the Graduate College. There are no foreign language requirements; however, a high degree of competence may be required in areas associated with thesis research, such as statistics, simulation, and computer programming.

Research Interests. Students may specialize in power and machinery (tillage, soybean production systems, pesticide application, operations analysis, engines and alternative fuels, vehicle stability, and operator ride comfort); soil and water mechanics (hydraulics of structures, agricultural hydrology, drainage, irrigation, mechanics of erosion, and water quality); structures and environment (structural analysis and design, environmental control, livestock housing systems, and waste management and utilization); or processing (systems analysis for farmstead mechanization, crop conditioning and processing, solar energy applications, physical properties of agricultural products, food engineering, and alternative energy systems).

Financial Aid. Fellowships, supported both by University and by College of Agriculture funds, are available on a competitive basis. A limited number of assistantships, normally on a half-time basis, providing both teaching and research experience are available.

AGRONOMY

Head of the Department: Robert W. Howell

Correspondence and Information: Head, Department of Agronomy, University of Illinois at Urbana-Champaign, N-214 Turner Hall, 1102 South Goodwin Avenue, Urbana, Illinois 61801

GRADUATE FACULTY

Professors: D. E. Alexander, A. H. Beavers, R. L. Bernard, J. S. Boyer, C. M. Brown, A. W. Burger, S. G. Carmer, J. M. J. deWet, J. W. Dudley, J. B. Fehrenbacher, D. W. Graffis, H. H. Hadley, R. H. Hageman, J. B. Hanson, J. R. Harlan, J. J. Hassett, J. D. Hesketh, C. N. Hittle, R. G. Hoeft, R. W. Howell, T. Hymowitz, J. A. Jackobs, R. L. Jones, L. T. Kurtz, R. J. Lambert, J. R. Laughnan, D. A. Miller, W. L. Ogren, T. R. Peck, D. B. Peters, R. W. Rinne, R. D. Seif, F. W. Slife, G. F. Sprague, F. J. Stevenson, M. D. Thorne, W. M. Walker, L. M. Wax, L. F. Welch, J. M. Widholm, C. M. Wilson

Associate Professors: W. L. Banwart, C. W. Boast, M. A. Cole, J. E. Harper, R. C. Hiltibran, I. J. Jansen, C. D. Nickell, E. B. Patterson, E. W. Stoller, J. W. Stucki, E. J. Weber, J. T. Woolley

Assistant Professors: R. H. Beck, G. E. Pepper, R. A. Pope, A. R. Portis, R. P. Walgenbach

Graduate Degree Programs. The Department of Agronomy offers course work leading to the Master of Science and Doctor of Philosophy degrees. Great flexibility exists for planning programs in various areas, and no rigid curricula are prescribed. The following areas of specialization indicate the breadth of opportunities, although they are not mutually exclusive: biometry and data processing, crop ecology, crop evolution, crop production, environmental agronomy, environmental physics, international agronomy, pedology, plant breeding and genetics, plant cytogenetics, plant physiology and biochemistry, soil microbiology and biochemistry, soil chemistry and mineralogy, soil fertility, soil management, soil physical and colloidal chemistry, soil physics, water relations and management, and weed science.

Admission. Applicants whose highest degree is the bachelor's degree will be considered for admission to the M.S. program. Admission to the Ph.D. program will be considered for applicants with the M.S. degree or nearing completion of that degree. Because of the diversity of programs in the Department of Agronomy, there is considerable variation in the preparation that is needed. Undergraduate training equivalent to that required at the University of Illinois at Urbana-Champaign for majors in agricultural science (plant or soil science), agronomy, crops, or soils is appropriate. For some programs greater emphasis is given to previous training in plant sciences, chemistry, geology, or mathematics. In all cases, previous experience or other significant evidence of serious interest in crops and/or soils is expected. A grade-point average of at least 4.0 (A = 5.0) in the last 60 semester hours of undergraduate work plus any graduate work completed is required. Applicants whose native language is not English must score at least 520 on the TOEFL examination.

Master of Science. A candidate must complete 8 units of graduate study as approved by his or her graduate advisory committee with a grade-point average of at least 4.0, and must present an acceptable thesis and pass an oral examination. At least 3 units must be at the 400 level, including at least 1 unit of course work other than Agronomy 499. An acceptable thesis is required, although the thesis may be waived by petition in unusual situations, and additional course work substituted. The master's examination is oral, although written examinations may be required at the option of the examining committee.

Doctor of Philosophy. A candidate must complete a minimum of 24 units of graduate study as approved by his or her graduate advisory committee with a grade-point average of at least 4.0 and must pass an oral examination which consists of defense of the thesis and examination on such other matters as members of the examining committee may select. Written examinations may be required at the option of members of the examining committees. At least 4 units of 300- or 400-level courses outside the Department of Agronomy are required. Residence requirements are the same as those of the Graduate College.

For the Ph.D. degree, a student must demonstrate reading competence in French, German, or approved foreign language substitutes, or satisfactorily complete 1½ additional units or the equivalent of course work in lieu of each language. Students whose native language is not English may fulfill the requirement for one language with their native tongue.

Research Interests. Excellent laboratory, greenhouse, and field research facilities are available. A network of experimental locations throughout the state and cooperative arrangements with other states makes possible studies under a wide range of environmental and climatic conditions. The department's major involvement in international programs may provide opportunities to conduct thesis research abroad. Brochures providing more detail about the graduate program and faculty research interests are available upon request.

AMERICAN CIVILIZATION

Graduate Degree Program. An interdisciplinary concentration in American civilization is available leading to the Master of Arts or Doctor of Philosophy degree. Students interested in this program enroll in the Department of History. Further information may be obtained from the School of Humanities or the Department of History.

ANIMAL SCIENCE

Head of the Department and Graduate Supervisor: D. E. Becker
Correspondence and Information: Head of the Department of Animal Science, University of Illinois at Urbana-Champaign, 328 Mumford Hall, 1301 West Gregory Drive, Urbana, Illinois 61801

GRADUATE FACULTY

Professors: D. H. Baker, E. M. Banks, D. E. Becker, O. G. Bentley, J. E. Corbin, S. E. Curtis, P. J. Dziuk, R. M. Forbes, U. S. Garrigus, R. W. Gorden, P. C. Harrison, A. H. Jensen, S. P. Mistry, H. W. Norton, B. A. Rasmusen
Associate Professors: J. M. Bahr, P. J. Bechtel, D. H. Buck, T. R. Carr, W. F. Childers, R. A. Easter, G. C. Fahey, Jr., D. Gianola, D. J. Kesler, L. H. Thompson
Assistant Professors: L. L. Berger, J. E. Garst, H. W. Gonyou, J. B. Gibb, F. K. McKeith, L. M. Lawrence, N. R. Merchen, D. F. Parrett, C. M. Parsons, D. P. Philipp, D. L. Thomas

Graduate Degree Programs. The Department of Animal Science offers graduate work leading to the Master of Science and Doctor of Philosophy degrees. Study and research may be pursued in several areas of specialization including: animal breeding, animal nutrition, reproductive physiology, environmental physiology, meat science, immunogenetics, world animal agriculture, ethology, quantitative genetics, endocrinology, nutritional biochemistry, gut microbiology, toxicology, muscle biology, systems analysis, and aquaculture. Animal management may be studied in an interdisciplinary program leading to the Master of Science degree. Beef cattle, horses, poultry, sheep, and swine, and a wide variety of companion and laboratory animals are available for study. The department's laboratories are equipped to support a wide range of studies.

Admission. The Graduate College admission requirements apply. A strong background in the biological, physical, and mathematical sciences is essential preparation for graduate work in specialized areas of animal science. Students lacking adequate preparation are expected to remove deficiencies during the first year of graduate study. The department desires applicants with a strong undergraduate background in animal science and with real promise of completing degree requirements in reasonable time.

Master of Science. The Master of Science in Animal Science may be completed with or without a thesis. Candidates are required to complete a minimum of 8 units of graduate work. At least 3 units must be in 400-level courses, 2 of which must be in animal science. No more than 2 units of thesis credit may be included in the program. Candidates are required to register in Animal Science 400 (Seminar) during each semester of study.

Doctor of Philosophy. The doctoral candidate must complete at least 8 units of nonthesis courses beyond the M.S. degree. The program of study must include registration in Animal Science 400 (Seminar) during each semester of study. The student must pass written and oral preliminary examinations administered by a committee of at least five faculty members, two of whom must be from outside the Department of Animal Science. The candidate must also complete 8 units of thesis

research and submit an acceptable thesis. The final examination is limited to a presentation and defense of the thesis research.

ANTHROPOLOGY

Head of the Department: Clark E. Cunningham
Director of Graduate Studies: F. K. Lehman
Correspondence and Information: Graduate Secretary, Department of Anthropology, University of Illinois at Urbana-Champaign, 109 Davenport Hall, 607 South Mathews Avenue, Urbana, Illinois 61801

GRADUATE FACULTY

Professors: E. M. Bruner, J. B. Casagrande, C. E. Cunningham, E. Giles, H. A. Gould, D. C. Grove, D. W. Lathrap, F. K. Lehman, J. C. McGregor (emeritus), B. Nettl, D. W. Plath, D. B. Shimkin, N. E. Whitten, Jr., R. T. Zuidema
Associate Professors: C. J. Bareis, D. S. Butterworth, C. M. Keller, L. L. Klepinger, T. J. Riley, J. O. Stewart
Assistant Professors: J. W. D. Dougherty, C. R. Farrer, P. A. Garber, R. B. Lewis

Graduate Degree Programs. The Department of Anthropology offers course work leading to the Master of Arts and the Doctor of Philosophy degrees.

Admission. A student without the equivalent of this department's undergraduate concentration may be admitted to either degree program but will be required to make up any deficiencies in his or her background in anthropology. The Graduate College admission requirements apply.

Master of Arts. The master's degree can be a first stage toward the doctorate or can be used by students wishing ultimately to apply a knowledge of anthropology in some related field. A candidate for the master's degree must complete at least 8 units of graduate credit and present an acceptable thesis or paper in lieu of thesis. At least 3 units must be at the 400 level, and 2 of these units must be in anthropology. The degree should be earned in not more than two years.

Doctor of Philosophy. The doctoral program is designed primarily to train scholars and teachers of the subject, but also increasingly to prepare professionals to work in nonacademic contexts. The master's degree is not required of all students going on to the doctorate. A candidate for the Ph.D. degree must earn at least 16 units of graduate credit beyond the master's degree, present a predoctoral research paper of substantially original content, and submit a thesis research proposal before the preliminary examinations. Before these examinations, the student must demonstrate ability to use, for scholarly purposes, either one foreign language at a high level of proficiency or two with ordinary reading proficiency. The language(s), the level to be tested, or possible alternatives will be determined by the student's advisory committee appointed early in the student's second year of residence.

Research Interests and Facilities. Courses and individualized study provide broad coverage of sociocultural, linguistic, archaeological, and physical anthropology. The department provides special emphases in the areas of agricultural origins and systems, analysis of symbolic systems, analytical osteology, primate evolution, cultural and human ecology and evolution, culture change and urbanization, ethnicity, medical anthropology and community health, and formal analysis and mathematical social anthropology. Faculty expertise includes the areas of East, Southeast, and South Asia; Oceania; Africa south of the Sahara; Mexico; South America and the Caribbean; and the United States. The department's Laboratory of Anthropology has constituent archaeological, pollen-analysis, ethnographic, and human biology laboratories. The department is the headquarters of the Illinois Archaeological Survey and offers summer field school training in archaeology. Departmental funds are available for

graduate student summer field research. Graduate student programs are enriched by close departmental relationships with the interdisciplinary area studies centers on campus: Africa, Asia, Latin America and the Caribbean, Russia and East Europe, and the Afro-American Academic Program. Students have access to the extensive computer facilities of the University through the Social Science Quantitative Laboratory. The *Journal of the Steward Anthropological Society,* edited by graduate students, has been published continuously since 1969.

ARCHITECTURE

(Including Architectural Engineering)

Director of the School: R. Alan Forrester
Chairperson of the Graduate Committee: A. C. Bianchini
Correspondence and Information: Chairperson, Graduate Committee, School of Architecture, University of Illinois at Urbana-Champaign, 608 East Lorado Taft Drive, Champaign, Illinois 61820

GRADUATE FACULTY

Professors: J. S. Baker, A. C. Bianchini, G. T. Clayton, W. L. Creese, G. D. Ding, W. Eng, R. A. Forrester, R. D. Katz, S. T. Lanford, W. H. Lewis, H. J. Miller, A. Notaras, W. J. O'Connell, S. Prasad, J. G. Replinger, I. Schousboe, J. H. Swing, R. L. Tavis, C. A. Winkelhake, H. C. Young
Associate Professors: J. R. Anderson, D. E. Bergeson, R. J. Betts, D. E. Brotherson, V. V. Cafourek, S. V. Curcic, W. H. Erwin, J. S. Garner, B. L. Hutchings, L. A. Leffers, C. A. Moyer, J. W. Murdock, V. A. Regnier, J. E. Simon, R. L. Smith, J. P. Warfield, H. C. White, D. J. Wickersheimer
Assistant Professors: J. G. Albrecht, R. E. Schmitt

Graduate Degree Programs. The School of Architecture offers three graduate programs, each leading to the Master of Architecture professional degree: a two-year program for those holding a four-year Bachelor of Science in Architectural Studies (or similar degree in architecture); a one-year program for those holding a five-year Bachelor of Architecture professional degree; and a three-and-one-half–year program for those holding a bachelor's degree in any field other than architecture. The Master of Architecture degree is accredited by the National Architectural Accreditation Board.

The School of Architecture, together with the Departments of Business Administration, Urban and Regional Planning, and Civil Engineering offer graduate programs leading to the following double degrees: Master of Architecture/Master of Business Administration, Master of Architecture/Master of Urban Planning, and Master of Architecture/Master of Civil Engineering (Construction Management).

Admission. Admission with full standing requires an architectural degree equivalent to the four-year Bachelor of Science in Architectural Studies from the University of Illinois at Urbana-Champaign or a five-year Bachelor of Architecture professional degree. The admission average must be at least 4.0 (A = 5.0). For those applicants who meet the degree requirements but have an admission average under 4.0, admission with limited standing may be permitted if evidence of exceptional qualifications is presented. Admission with limited standing may also be permitted for those applicants holding a degree less than equivalent to the University of Illinois at Urbana-Champaign degree provided that equivalency can be established through additional course work.

Applicants are ranked and selected on the basis of the following criteria: undergraduate academic performance on the basis of admission averages determined from official college transcripts, portfolio or brochure of applicant's past work in the architectural field, a statement of objectives, three letters of recommendation, and relevant professional work experience.

Master of Architecture (Two-Year Graduate Program). The two-year professional degree program, intended for those entering with a four-year baccalaureate in architectural studies, emphasizes further study in architectural disciplines, study in depth in one optional area of concentration, and/or participation in research.

Advanced study in architectural disciplines, building upon the fundamentals established in a four-year undergraduate study program, comprises the initial phase of the two-year graduate program. This initial phase is a two-semester integrated sequence in architectural administration, construction, design, and structures. This work completes the common core of course work required of all candidates for the Master of Architecture professional degree.

Election of an optional area of concentration comprises the final phase of the graduate program and allows a student to devote two semesters' work to a specific field of his or her choice. The department offers optional areas of concentration in architectural design, architectural history, historic preservation and rehabilitation, housing environments, architectural management, architectural practice, architectural structures, and urban design. Some of these options afford the opportunity for further specialization; for instance, social and behavioral factors in design, campus planning, criticism, industrialization, design methods and theory, interior architecture, and construction management. There is a strong shared interest in environment and behavior studies with the Departments of Landscape Architecture and Urban and Regional Planning and with the Office of Housing Research and Development. Individualized areas of concentration may also be pursued through an individual study option for which a research thesis is usually required.

Participation in or initiation of research is encouraged in the optional areas of concentration. For those qualified, many opportunities currently exist in departmental and interdepartmental areas. These include unique research opportunities within the School of Architecture based on research grants from various external funding agencies; the Community Research Forum, a unit of the School of Architecture; the Office of Housing Research and Development, a unit of the Graduate College; and the Small Homes Council–Building Research Council, a unit of the College of Fine and Applied Arts.

A candidate admitted with full or qualified standing to the two-year professional degree program must complete at least 15½ units of graduate work. The candidate must spend at least four semesters and earn at least half of the required units in residence. A candidate admitted with full standing may complete the program in two full-time academic years of study.

Master of Architecture (One-Year Graduate Program). Applicants who hold the five-year Bachelor of Architecture degree are considered to have earned their first professional degree. For these students, a one-year professional degree program has been developed emphasizing further study in depth of one optional area of concentration, and/or participation in research identical to the final phase of the two-year graduate program.

A candidate admitted to the one-year graduate program must complete at least 8 units of graduate work. The candidate must spend at least two semesters and earn at least half of the required units in residence. A candidate admitted with full standing may complete the program in one full-time academic year of study.

Master of Architecture (Three-and-One-Half–Year Graduate Program). The three-and-one-half–year professional degree program has been designed for those applicants who have a bachelor's degree in any field other than architecture. Emphasis is placed on the development of sufficient background in introductory architectural studies so that the applicant may successfully complete the equivalent of the two-year graduate program described above.

Applicants accepted into the three-and-one-half–year program will initially be admitted with limited standing. Full standing may be attained by completion of introductory architectural studies and acceptance into the two-year graduate program (see admission criteria).

The time necessary to complete the program will depend upon the nature of undergraduate course work completed by the applicant, any professional work experience, and the architectural specialization selected.

Master of Architecture/Master of Business Administration. This double degree program aims at developing the management potential of qualified candidates in a curriculum emphasizing the theory and application of contemporary business administration principles in the comprehensive practice of architecture. For entry into this program, the applicant must satisfy the admission and performance requirements of each academic unit. Application for admission may be made simultaneously to both units or admission to the one unit may be sought after gaining entry to the other.

A candidate entering the double degree program with a four-year baccalaureate in architectural studies must complete at least 21½ units of graduate work and, if admitted with full standing, may complete the program in the condensed time span of five semesters. A candidate entering the program with a five-year Bachelor of Architecture degree must complete at least 16 units of graduate work, and if admitted with full standing may complete the program in the condensed time span of four semesters.

Master of Architecture/Master of Urban Planning. This double degree program offers an opportunity to obtain an education for careers which combine and integrate the disciplines of architecture and planning. The program requires a match-up of related subject areas from each department in order to meet the requirements for each degree. These areas include: housing/community development, preservation/preservation planning, and urban design/environmental planning and land use. For entry into this program the applicant must satisfy the admission requirements of each academic unit. Application for admission may be made either simultaneously to both units or in sequence.

A candidate entering the program with a four-year baccalaureate in architectural studies must complete at least 20½ units of graduate work and, if admitted with full standing, may complete the program in a condensed time span of six semesters and one summer session. A candidate entering the program with a five-year Bachelor of Architecture degree must complete at least 16 units of graduate work, and, if admitted with full standing, may complete the program in the condensed time span of four semesters and a summer session.

Master of Architecture/Master of Civil Engineering (Construction Management). This double degree program offers to qualified applicants the opportunity to develop competencies for careers which combine the disciplines of architecture and civil engineering construction management. For entry into this program the applicant must satisfy the admission and performance requirements of each academic unit. Application for admission may be made simultaneously to both units, or admission to the one unit may be sought after gaining entry to the other.

A candidate entering the program with a four-year baccalaureate in architectural studies must complete at least 21½ units of graduate work, and, if admitted with full standing, may complete the program in the condensed time span of five semesters. A candidate entering the program with a five-year Bachelor of Architecture degree must complete 16 units of graduate work, and, if admitted with full standing, may complete the program in four semesters.

ART AND DESIGN

(Including Art Education, Art History, Ceramics, Cinematography, Glass, Graphic Design, Industrial Design, Metals, Painting, Photography, Printmaking, and Sculpture)

Director: E. C. Wicks

Correspondence and Information: G. W. Hardiman, Coordinator of Graduate Programs, School of Art and Design, University of Illinois at Urbana-Champaign, 120 Art and Design Building, 408 East Peabody Drive, Champaign, Illinois 61820

GRADUATE FACULTY

Professors: E. H. Betts, P. Fehl, D. Frith, F. Gallo, F. Gunter, G. W. Hardiman, K. M. Lansing, N. McFarland, R. Perlman, D. Pilcher, C. Regehr, D. Rowan, J. A. Savage, A. Sinsabaugh, R. Sterkel, E. C. Wicks, E. J. Zagorski, T. Zernich, J. Ziff

Associate Professors: R. F. Blakley, D. Bushman, M. Franciscono, K. Munakata, J. Rascheff, L. Smith, D. Socha

Assistant Professors: W. Carlson, B. DeGenevieve, N. Gambill, A. Glaze, H. Maguire, P. Morselli, S. Orso, S. Polcari, A. Ushenko

Graduate Degree Programs. The School of Art and Design offers the Master of Arts in Art Education and in Art History, the Master of Fine Arts, the Doctor of Education in Art Education, and the Doctor of Philosophy in Art History. The Graduate College admission requirements apply for all programs.

Master of Arts in Art Education. The program of study leading to the degree of Master of Arts in Art Education is designed to provide advanced professional preparation for art teachers and supervisors. A minimum of 8 units of study is required for the degree. Three units must be taken at the 400 level, of which 2 units must be in art education graduate seminars. In addition to professional courses in art education, students may elect course work in drawing, painting, sculpture, printmaking, photography, cinematography, ceramics, glassworking, metalsmithing, and art history. Specific course selection is determined in consultation with the student's adviser. While the majority of applicants to this program hold valid teaching certificates, applicants with certification-related deficiencies may be admitted to the program. However, graduate credit cannot be granted for courses taken to make up such deficiencies. Candidates must spend at least two semesters or the equivalent in residence; however, applicants currently employed as teachers may apply for residence credit for "summers only" enrollment. No thesis is required.

Master of Arts in Art History. This program provides basic preparation for teaching at the college level, background in the history of art for museum work, and preliminary study for the doctoral degree. In addition to the general requirements, the prerequisite for admission is ordinarily an undergraduate degree in art history or a strong preparation in related humanistic studies. Applicants with little background in art history but who have done exceptionally well as undergraduates in other disciplines will be seriously considered. A minimum of 8 units is required for the degree. At least 6 units must be in the history of art and architecture, of which at least 4 units must be in art history graduate seminars. For those interested in art museum training, special courses in museology are offered by the staff of the Krannert Art Museum. Proficiency in French or German must be demonstrated by the end of the first year of residence. Before the degree is conferred, the candidate is required to pass an examination on the general field of art history. A thesis is required.

Master of Fine Arts. The degree of Master of Fine Arts in Art and Design with fields of specialization in ceramics, cinematography, glass, graphic design, industrial design, metals, painting, photography, printmaking, and sculpture is designed to prepare qualified individuals for distinctive achievement in the professional area of their choice. Applicants should clearly indicate their intended specialization on their application for admission. A minimum of 16 units of graduate credit is required for the M.F.A. degree. Individual studio space and specialized resources and materials essential to the acquisition of a high-quality professional education are available to students in all areas of study. A graduation exhibition of creative work is required. Candidates must spend a minimum of four semesters or the equivalent in residence.

Doctor of Education in Art Education. The program leading to the degree of Doctor of Education in Art Education is designed to prepare qualified art educators for careers in college-level teaching and research. An applicant for admission must hold a master's degree in art education or the equivalent from an accredited institution. A minimum of two years acceptable teaching experience is required. Admission is determined by examinations, personal interviews, records of previous education and experience, and letters of recommendation. Applicants should present credentials well in advance of their first registration. A minimum of 16 units of course work beyond the master's degree is required.

Doctor of Philosophy in Art History. The program leading to the degree of Doctor of Philosophy in Art History is designed to prepare students for scholarship and for teaching at the college level. Applicants must have the Master of Arts degree in Art History or the equivalent. Students earning the master's degree at the University of Illinois must pass the qualifying examination with a high score and write a thesis or research paper of superior quality in order to be admitted to the doctoral program. Students taking the master's degree elsewhere must satisfy the Graduate Committee on the History of Art and Architecture as to their fitness to undertake work on a doctoral level. All students must have a reading knowledge of French and German. Students normally elect to specialize and write a thesis in one of the following fields: medieval, Renaissance, baroque, modern, or oriental. In addition, the student will elect a minor in another art history field.

Financial Aid. Fellowships, assistantships, and tuition and service fee waivers are awarded each year on a competitive basis with consideration given to the applicant's grade-point average and, in the case of applicants for the M.F.A. programs, quality of creative work.

Resources. Resources for the graduate student in art and design include the Krannert Art Museum's excellent permanent collections and changing exhibitions; the Ricker Art Library, one of the largest art and architecture libraries in the nation; the Krannert Center for the Performing Arts; and a variety of lectures, symposiums, musical programs, dramatic productions, and other cultural events associated with a large and progressive university.

ASIAN STUDIES

(Including Burmese, Chinese, Indonesian, Japanese, Korean, Sanskrit, and Thai)

Director: Peter Schran
Graduate Supervisor: R. Chang
Correspondence and Information: Center for Asian Studies, University of Illinois at Urbana-Champaign, 1208 West California Avenue, Urbana, Illinois 61801

GRADUATE FACULTY

Professors: P. Balgopal, E. Bruner, H. Choldin, S. Cohen, R. Crawford, C. Cunningham, C. E. Dawn, L. Eastman, F. Fliegel, F. Gottheil, H. Gould, K, Gould, T. Hymowitz, N. Jacobs, B. Karsh, B. Kling, F. Lehman, B. Nettl, A. Peshkin, D. Plath, P. Schran, K. Taira, G. Yu
Associate Professors: S. Douglas, R. Jennings, W. MacDonald, S. Makino, K. Munakata, J. Peterson, T. Riley, M. Shorish, K. Southwood, M. Wagner, H. Wechsler, M. Weinbaum, M. Weinstein
Assistant Professors: J. Dougherty, R. Toby

Graduate Degree Program. The Center for Asian Studies offers a two-year program of language and area courses leading to the Master of Arts with regional concentrations in East Asia, Middle East, South Asia, and Southeast Asia. The program is a basic preparation in language and area training, both for those intending to proceed

to the Ph.D. degree in a related field and for those preparing for careers not requiring the doctorate. The Center for Asian Studies also administers a graduate minor in Asian studies in cooperation with various departments, allowing a graduate student electing this minor to concentrate on East Asia, Middle East, South Asia, and Southeast Asia, or a combination of two or more of these areas.

Admission. Candidates for admission must meet at least the minimum standards established by the Graduate College for graduate study at the University of Illinois at Urbana-Champaign, but final selection is determined by a committee of center faculty. Applicants must specify one of the regional concentrations at the time of application. Although prior language and area training relating to the regional concentration is highly desirable, it is not required for admission. Those entering without any prior training or experience, however, may be required to take, without credit toward the degree, such work as the adviser may deem necessary to make up any deficiencies.

Master of Arts. A candidate must complete 9 units of work in area studies distributed among at least three disciplines and chosen from an accepted list of courses, demonstrate a reading knowledge of one language related to the candidate's regional concentration by satisfactory completion of an examination or appropriate course work, pass an examination covering the area studies taken while in residence, and complete two satisfactory research/seminar papers. No thesis is required.

Minors in Asian Studies. A candidate for a master's degree who elects Asian studies as a minor must earn at least 2 units of graduate credit in approved courses in at least two departments outside the major department.

A doctoral candidate who elects Asian studies as a minor must earn at least 4 units of graduate credit in approved courses in at least two departments outside the major department. Also, prior to the completion of course requirements for the degree, the doctoral candidate must complete satisfactorily an examination in an appropriate Asian language.

ASTRONOMY

Head of the Department: Icko Iben, Jr.

Correspondence and Information: Head, Department of Astronomy, University of Illinois at Urbana-Champaign, 341 Astronomy Building, 1011 West Springfield Avenue, Urbana, Illinois 61801

GRADUATE FACULTY

Professors: J. H. Cahn, I. Iben, Jr., J. B. Kaler, E. C. Olson, L. E. Snyder, G. W. Swenson, J. W. Truran, W. D. Watson, K. M. Yoss

Associate Professors: R. M. Crutcher, J. R. Dickel, J. S. Gallagher III, T. C. Mouschovias, L. L. Smarr

Assistant Professor: R. F. Webbink

Graduate Degree Programs. The Department of Astronomy offers graduate work leading to the Master of Science and Doctor of Philosophy degrees. The goal of the graduate program in astronomy is to provide broadly based training in modern astrophysics and astronomy for a small and carefully selected student body. Individually designed programs involving close contact with faculty members are encouraged, and an understanding of fundamental principles and techniques and their applications to research problems of current interest is emphasized. Students are expected to acquire a solid knowledge of modern physics as well as of general astronomy. A major objective is to maintain an exciting intellectual environment in which students can develop their scientific creativity and their enthusiasm for astronomy.

Admission. Admission decisions are made once a year in the spring. Applications for admission and financial assistance must be received by February 15. Normal entrance requirements are a bachelor's degree in astronomy, physics, physical chemistry, or mathematics, and a one-year course in descriptive astronomy. A minimum grade-point average of 4.0 (A = 5.0) and satisfactory scores on the Graduate Record Examination (verbal, mathematics, and advanced physics portions) are requisites for admission. The award of financial assistance normally requires an average of higher than 4.5.

Master of Science. Eight units of study in graduate courses are required. There are no thesis or foreign language requirements. The 8 units of course work may be distributed as follows: all units taken in astronomy or 4 units selected from approved courses in physics and mathematics and the remaining units from astronomy courses. At least 3 units must be at the 400 level.

Doctor of Philosophy. The Ph.D. degree requires completion of 16 units beyond the master's degree in courses in astronomy and related fields (some of which may involve individual study and research), satisfactory performance on a general qualifying examination taken in the second or third semester of study, demonstrated reading ability in one foreign language, and completion of an original research project culminating in a thesis that is publishable in whole or in part.

Financial Aid. University Fellowships are available and may be combined with part-time teaching assistantships. Most resident students are supported for their first two or three years by half-time teaching assistantships (starting salary $5,900 per academic year in 1981-82). The typical teaching assistant takes three graduate courses per semester and spends twenty hours per week handling quiz sections in elementary astronomy courses. Teaching assistantships are responsible positions, and the concomitant duties are considered to be a valuable part of the student's educational experience. Advanced students may compete for research assistantships offered by faculty members whose research is partially supported by federal grants.

Faculty Research Interests. Research activity includes observational and theoretical investigation of the solar system (comets, planets, cosmochronology); stars (stellar structure and evolution, gravitational collapse, nucleosynthesis, novae, supernovae, stellar atmospheres, binaries, stellar statistics, pulsars); the interstellar medium (planetary nebulae, molecular clouds, cosmic rays, supernova remnants, galactic structure); and extragalactic systems (galaxies, their thermonuclear evolution and dynamic behavior, quasars).

Astrophysics is also a strong research interest of about six faculty members in the Department of Physics. Current activity in physics centers on the physics of neutron stars, white dwarfs, compact X-ray sources, and supernova ejecta, with broad-ranging interests in the application of modern physics to astronomy. Students in astronomy may select thesis supervisors in the Department of Physics as well as in the Department of Astronomy.

Research Facilities. A 40-inch diameter reflecting telescope is located on Mt. Laguna in Southern California. It is operated jointly with San Diego State University who also operates 16-inch and 24-inch telescopes occasionally used by University of Illinois faculty and students. The Department of Astronomy supplies transportation costs to and from California. The department also purchases time on larger optical and radio telescopes operated by other universities. Both optical and radio astronomers frequently obtain observing time on telescopes at national observatories at Kitt Peak, Cerro Tololo, Greenbank, and Socorro. Computations are performed on an IBM 360/75, a CDC CYBER 175, and a CYBER 174 accessed via remote terminals in the Department of Astronomy. Simultaneous time sharing and batch processing with unusual speed are features of the computational system, which is among the most advanced university-based systems in the nation. A new image processing system is in the process of being installed which will greatly enhance the ability of both observers and theoreticians to analyze their raw data quickly.

ATMOSPHERIC SCIENCES

Head of Department: Y. Ogura

Correspondence and Information: Department of Atmospheric Sciences, University of Illinois at Urbana-Champaign, 6-109 Coordinated Science Laboratory Building, 1101 West Springfield Avenue, Urbana, Illinois 61801

GRADUATE FACULTY

Professors: M.-K. Mak, Y. Ogura, T. Sasamori, R. G. Semonin

Associate Professors: K. V. K. Beard, S.-T. Soong, K. E. Trenberth, J. E. Walsh, R. B. Wilhelmson

Assistant Professors: J. R. Gyakum, S. Q. Kidder

Graduate Degree Programs. Graduate programs leading to the Master of Science and Doctor of Philosophy degrees are offered.

Admission. Applications for admission to this program must satisfy the general requirements for admission to the Graduate College. Previous training in the atmospheric sciences is not essential. It is strongly recommended, however, that students who intend to study for advanced degrees in the atmospheric sciences know the fundamentals of classical physics and applied mathematics. There is no foreign language requirement.

Master of Science. The requirements for the degree of Master of Science in Atmospheric Sciences correspond to the general requirements of the Graduate College for the M.S. degree with the additional requirement of a minimum of 4 units to be taken in graduate courses in atmospheric sciences, excluding the thesis (499). Therefore, the total requirements are 8 units, 3 of which must be from courses numbered in the 400 series and 4 of which must be in atmospheric sciences. A written thesis, which may account for 1 or 2 units of credit, is also required. Further information on exact degree requirements can be obtained from the department.

Doctor of Philosophy. All candidates for the Ph.D. degree must satisfy the general requirements of the Graduate College and are required to pass a qualifying examination on the basic principles of atmospheric science, a preliminary examination based on a written thesis proposal, and a final examination based on the completed thesis. Course requirements and these examinations are described in detail in a pamphlet which may be obtained from the department.

Financial Aid. Financial aid is available in the form of research and teaching assistantships, University Fellowships, and waivers of tuition and service fees.

Research Interests. These degree programs are designed for students interested in research and application in many aspects of atmospheric sciences. The areas of research include physics of aerosol and precipitation, observational, theoretical and modeling studies of clouds and severe storms, synoptic and mesoscale meteorology, numerical weather prediction, monsoonal circulations, polar meteorology and sea-ice forecasting, tropical meteorology, general circulation, climate and climate changes, atmospheric turbulence and boundary layers, atmospheric radiative processes, satellite meteorology, and crop yield–weather relationships.

BUSINESS ADMINISTRATION

Head of the Department: Louis R. Pondy

Correspondence and Information: Department of Business Administration, University of Illinois at Urbana-Champaign, 350 Commerce Building (West), 1206 South Sixth Street, Champaign, Illinois 61820

GRADUATE FACULTY

Professors: A. Andreasen, R. V. Evans, D. M. Gardner, R. M. Hill, H. Hinomoto, A. Negandhi, G. Oldham, L. R. Pondy, W. J. Primeaux, D. M. Roberts, A. Roth, K. M. Rowland, G. R. Salancik, J. N. Sheth, J. L. Simon, S. Sudman, H. Thomas, F. W. Winter

Associate Professors: C. Holsapple, A. Huff, J. Kindt, J. K. Murnighan, D. W. Whetten

Assistant Professors: R. Atkinson, C. Blair, I. Duhaime, G. Frazier, R. Howell, K. R. Kumar, J. Porac, Z. Ritz, C. Schwenk

Graduate Degree Programs. The Department of Business Administration offers graduate programs leading to the degrees of Master of Business Administration, Master of Science in Business Administration, and Doctor of Philosophy in Business Administration. The department also offers, in cooperation with other departments and colleges, a variety of interdisciplinary programs leading to such combined degrees as the Juris Doctor and Master of Business Administration, the Master of Architecture and Master of Business Administration, and the Bachelor of Arts (or Science) and the Master of Business Administration for superior undergraduates. Additional joint degree programs are the Master of Science in Electrical Engineering and Master of Business Administration, and the Doctor of Medicine and Master of Business Administration.

Admission. Graduate admission depends on many factors relating to demonstrated academic competence and potential of candidates. Our students are among the top 15 percent of all United States undergraduates scoring on the national Graduate Management Admission Test (GMAT) for management schools; their grade-point averages rank even higher, and about two-thirds have had full-time work experience. Interviews are advised (not required) for applicants with extenuating circumstances. Persons seeking admission should have completed one year of college-level courses in calculus or be prepared to take a noncredit mathematics course upon entering the program. In general, admission is based on a person's (1) previous academic accomplishment; (2) demonstrated potential as indicated by performance on the Graduate Management Admission Test; (3) statement of professional and academic goals; and (4) letters of recommendation from professors, supervisors, or colleagues. Undergraduate majors can be from any area of study.

Master of Business Administration. The M.B.A. degree is designed as a general degree, preparatory to assuming administration positions, to be integrated with other technical and professional skills. The program requires 16 units, which can be completed easily in three or four semesters and two summers. A student can exempt up to 4 units and complete 12 units in two semesters and two summers. The program may be started in the summer, fall, or spring terms.

The program has three components: administrative foundations, managerial functions, and professional concentrations. Course work involving the foundation and functional courses may be exempted. Professional concentrations may be elected from any curriculum in the University which is administratively justifiable or within a joint degree program.

Foundations. Six courses form the theoretical grounds for the M.B.A. program. These include quantitative methods (statistics and operations research), behavioral and social science (human and organizational behavior), and economics (managerial and macroeconomics).

Functions. Six courses introduce the functional areas of management in most modern organizations. The functional area courses include: marketing, managerial accounting and control, financial management, operations management, business law, and administrative policy strategy. These courses are designed as overviews and do not substitute for concentrated technical or professional education in each area.

Concentrations. Four courses are elected by students to integrate, develop, and refine their management interests. Students from joint degree programs take their concentrations in their specialty areas — law, architecture, medicine, or engineering. Other

students concentrate in such business areas as finance, international marketing, managerial accounting, consumer and industrial marketing, organizational development, and so on.

Master of Science in Business Administration. The Master of Science in Business Administration is a 10- to 12-unit master's program. The focus is on preparation for advanced study in the doctoral program or for a technical or research position in industry or government. The course work can usually be completed in one to one-and-a-half years.

The program core for this degree is the same as for the Master of Business Administration. Four courses that will constitute the major area of specialization are to be chosen from management science, organizational behavior, management information systems, operations management, marketing, international business operations, business economics, and strategic management and policy. Two courses that will constitute a minor area can be independent research courses or relevant courses offered within or outside the department. A thesis may be prepared in place of the two courses.

Doctor of Philosophy in Business Administration. This program offers an in-depth education in teaching and research in selected areas of business and administration. Doctoral students can specialize in management science, marketing, organizational behavior, management information systems, operations management, international business, business economics, and strategic management and policy. The program is intensive, flexible, and adapted to individual needs.

Each student's program entails sufficient study and preparation to achieve the following: (1) competence in behavioral science, operations research, research methodology, and statistics, constituting the core of the program; (2) in-depth expertise in a major area; (3) expertise in at least one area in addition to the chosen major area, with this minor area selected from within or outside the department; (4) teaching competence; (5) research or problem-solving competence.

Competency is determined by comprehensive written and/or oral examinations. Following successful completion of all course work and comprehensive examinations in major and minor areas, the student must propose and gain approval of a thesis topic at a public colloquium. The final program requirement is the successful oral defense of the thesis.

For persons entering the program from an undergraduate program, the minimum requirements are 16 course units and 8 dissertation units. Persons entering with a master's degree in business generally will need a minimum of 8 course units and 8 dissertation units. The program usually is completed in four years, although students with a master's degree in business may require only three years.

Juris Doctor and Master of Business Administration Program. This program, leading to the J.D. and M.B.A. degrees in four years, is designed to provide training for careers in which administration and law significantly overlap. To enter the program, a person must apply separately and be admitted to both the College of Law and the Department of Business Administration. The policies of each with respect to degree requirements, grades, examinations, and other academic requirements for graduation are applicable.

During the first two years, the student takes the first-year law curriculum in one year and the first-year business administration curriculum in the other. The student takes courses in both colleges during the third and fourth years. As a minimum program, a student must take 74 hours of law courses and 11 units (equivalent to 44 semester hours) of business administration courses.

Master of Architecture and Master of Business Administration. This program is designed to provide training for careers in which administration and management principles in architecture overlap. Applicants to the program must be admitted to both the School of Architecture and the Department of Business Administration. One application form and one fee are required. The policies of each department with respect to degree requirements, grades, examinations, and other academic requirements for graduation are applicable.

This double master's program enables the student taking a full load each semester and with normal progress to fulfill the requirements for both degrees by completing a total of 21½ units in five semesters.

Other Double Degree Programs. In addition to law and architecture, the department offers several other professional programs which enable students to prepare for two professional areas simultaneously. One program leads to the M.B.A. degree with specialization in research management, in conjunction with the Survey Research Laboratory. The Master of Science in Electrical Engineering and Master of Business Administration program, leading to the separate degrees of M.S.E.E. and M.B.A., is designed for careers in public service and professional engineering offices or careers in business which require working extensively on engineering application. The normal degree requirements of 16 units for the M.B.A. degree and 8 units for the M.S.E.E. degree are reduced by a total of 6 units through an exchange of credits between departments. For information on the M.S.E.E. program, write to Head of the Department, Department of Electrical Engineering, 155 Electrical Engineering Building, 1406 West Green Street, Urbana, Illinois 61801.

The Doctor of Medicine and Master of Business Administration program, leading to the separate degrees of M.D. and M.B.A., is designed for the medical doctor who anticipates administrative and management responsibilities. In addition to the requirements for the M.D. degree, the program requires 12 units from business administration. The program can be completed over four full years (including three summers). For information on the M.D. program, write Office of the Dean, University of Illinois School of Clinical Medicine at Urbana-Champaign, 190 Medical Sciences Building, 506 South Mathews Avenue, Urbana, Illinois 61801. In the Bachelor of Arts (or Bachelor of Science) and Master of Business Administration program, the College of Commerce and Business Administration, the College of Liberal Arts and Sciences, and the Graduate College have created a joint baccalaureate and M.B.A. degree program. Qualified students earn both bachelor's and M.B.A. degrees within five years. Undergraduate and professional education are integrated through careful course planning beginning in the sophomore year. The student applies to the program during the junior year. During the fourth year, students complete required M.B.A. graduate courses as electives for their baccalaureate program.

International Programs. The department has worked with various language and social science faculty members to design master's and doctoral program options which address education for the growing internationalization of business. These are suited particularly for undergraduates prepared in foreign languages and cultures, international economics, and politics. Inquire about specific opportunities.

Residence Requirement. Master's degree candidates usually must maintain continuous full-time registration through to course work completion. Ph.D. candidates must maintain continuous registration through approval of a dissertation proposal. Leaves of absence for up to one year are permitted under extenuating circumstances with Graduate College and departmental approval.

Financial Aid. Financial assistance is available through nonservice awards such as fellowships and/or tuition and fee waivers; service awards, such as teaching and research assistantships; work-study programs; and loans. Application can be made on admission applications filed by February 15. Nonservice awards are made by the Graduate College based on scholarly and creative achievement and promise. Service awards are selected by the Department of Business Administration with approval of the Graduate College.

Research Interests. Faculty research interests are in the areas of marketing, organizational behavior, management science, management information systems, strategic planning and business policy, international business, accounting, economics, and finance. The College of Commerce and Business Administration houses computer facilities, a behavioral science laboratory, and a separate library, and maintains contacts with industry and government through its Executive Development Center, Survey Research Laboratory, Bureau of Economics and Business Research, and several professional and scholarly journals.

CERAMIC ENGINEERING

(Including Ceramic Science)

Head of the Department: C. G. Bergeron

Correspondence and Information: Head, Department of Ceramic Engineering, University of Illinois at Urbana-Champaign, 203 Ceramics Building, 105 South Goodwin Avenue, Urbana, Illinois 61801

GRADUATE FACULTY

Professors: R. L. Berger, C. G. Bergeron, S. D. Brown, J. A. Nelson, D. A. Payne, W. S. Williams, J. F. Young

Associate Professors: R. C. Buchanan, T. A. Willmore, G. P. Wirtz

Assistant Professors: W. T. Petuskey, S. H. Risbud, S. I. Stupp

Graduate Degree Programs. The Department of Ceramic Engineering offers graduate work leading to the Master of Science and the Doctor of Philosophy degrees in two areas, ceramic engineering and ceramic science. The ceramic engineering program provides instruction and research related to the applied engineering science of ceramic materials, processing, and products. Candidates in this area of graduate work are usually those who have completed an undergraduate degree in engineering. The program in ceramic science is more concerned with basic science, and candidates may come from nonengineering disciplines such as chemistry, physics, or geology.

Admission. The minimum acceptable admission average is 4.0 (A = 5.0) on the advanced undergraduate academic work of the candidate and on any previous graduate work completed. Letters of reference are also used in making the departmental recommendation on admission. For international students, the minimum acceptable TOEFL score is 575. Graduate Record Examination scores are not required.

Master of Science. The candidate for the Master of Science in Ceramic Engineering or in Ceramic Science must complete a minimum of 8 units of graduate work including a thesis. Five units of course work are required, including at least 1½ units of ceramic engineering 400-level courses, excluding Ceramic Engineering 495, 497, and 499.

Doctor of Philosophy. The minimum requirement for the Ph.D. degree is 16 units beyond the master's degree, including thesis units. Doctor of Philosophy candidates whose undergraduate degree was not earned in ceramic engineering or in ceramic science are required to complete seven ceramic engineering 300- or 400-level courses. Candidates are required to complete first the master's thesis or give evidence of equivalent research experience. They must also pass the departmental qualifying examination. There is no foreign language requirement. Minor requirements are satisfied by courses in chemistry, physics, mathematics, geology, or other engineering disciplines. Students majoring in chemistry, physics, engineering, and in certain other fields may take sole or second minors in ceramic science or ceramic engineering.

Financial Aid. Candidates for graduate degrees may be supported through assistantships, fellowships, or waivers of tuition and service fees. Assistantships for research or teaching provide for a monthly stipend plus waiver of tuition and service fees.

Fellowships require no work commitment and also pay a monthly stipend plus a waiver of tuition and fees. Awards for financial assistance are based principally on the candidate's academic record, statement of plans, and letters of reference.

CHEMICAL PHYSICS

Head of the Department of Chemistry: H. S. Gutowsky

Head of the Department of Physics: Ralph O. Simmons

Correspondence and Information: Students with undergraduate degrees in chemistry should direct inquiries and applications to the Head of the Department of Chemistry, University of Illinois at Urbana-Champaign, 108 Noyes Laboratory, 505 South Mathews Avenue, Urbana, Illinois 61801; students with undergraduate degrees in physics should direct inquiries and applications to the Head of the Department of Physics, University of Illinois at Urbana-Champaign, 211 Loomis Laboratory of Physics, 1110 West Green Street, Urbana, Illinois 61801.

Graduate Degree Programs. A chemical physics program leading to the Doctor of Philosophy makes it possible for students to gain the necessary background and perform original research in this interdisciplinary field of science. Fundamental research on many properties of molecular and solid state systems is based on an understanding of chemistry, physics, and mathematics that can best be obtained by training in more than one department. Students may make use of the facilities available in both the School of Chemical Sciences and the Department of Physics.

Admission. Graduate College admission requirements apply. To be considered for admission, applicants should have undergraduate degrees in chemistry or physics with a strong background in the major field of chemistry or physics and more than the usual training in the other area. Those who received their degrees in physics should have the equivalent of one semester each of organic and inorganic chemistry and one year of physical chemistry. Those who received their degrees in chemistry should have the equivalent of one semester each of intermediate mechanics and intermediate electricity and magnetism. One year of mathematics beyond calculus is recommended. Any deficiencies should be removed during the first year of study.

Doctor of Philosophy. In addition to taking a series of appropriate courses determined mainly by their research interests, students must pass either the qualifying examination in the Department of Physics or the set of cumulative examinations given in physical chemistry. A knowledge of basic quantum mechanics and statistical mechanics must also be demonstrated (for example, by passing the final examination in appropriate courses). In addition, students must pass an oral preliminary examination concerned with their preparation for doing research. Research for the thesis is performed under the direction of faculty who are currently active in chemical physics. Many of these staff members are affiliated with the Materials Research Laboratory (MRL). MRL is a multidisciplinary facility shared by staff and students from the Departments of Physics, Chemistry, Metallurgy, Ceramic Engineering, Electrical Engineering, and other related departments who have common interests in materials science.

Financial Aid. Students may apply for fellowships and assistantships from either the Department of Chemistry or the Department of Physics.

CHEMICAL SCIENCES

(Including Biochemistry, Chemical Engineering, and Chemistry)

Director of the School: H. S. Gutowsky

Correspondence and Information: Director of the School of Chemical Sciences, University of Illinois at Urbana-Champaign, 108 Noyes Laboratory, 505 South Mathews Avenue, Urbana, Illinois 61801

The School of Chemical Sciences includes the Departments of Biochemistry, Chemical Engineering, and Chemistry. Study programs leading to the degrees of Master of Science and Doctor of Philosophy are offered in each of the departments as described in the following sections. The school structure is designed to meet the differing needs of the three departments and yet retain the advantages of a common approach to overlapping concerns. Service facilities, technical shops, and a placement office are pro-

vided by the school. Support for graduate training is available in the form of assistantships, traineeships, and fellowships. Prospective students may obtain application forms and information relevant to their interests from the head of the appropriate department or from the director of the school.

Biochemistry

Head of the Department: Lowell P. Hager
Correspondence and Information: Head, Department of Biochemistry, University of Illinois at Urbana-Champaign, 415 Roger Adams Laboratory, 1209 West California Avenue, Urbana, Illinois 61801

GRADUATE FACULTY

Professors: J. M. Clarke, Jr., H. E. Conrad, I. C. Gunsalus, L. P. Hager, N. J. Leonard, R. L. Switzer, O. C. Uhlenbeck, G. Weber
Associate Professors: R. B. Gennis, M. Glaser, R. I. Gumport, A. Jonas, G. W. Ordal, D. J. Shapiro
Assistant Professors: J. A. Jaehning, W. F. Mangel

Graduate Degree Programs. The Department of Biochemistry offers graduate work leading to the Master of Science and the Doctor of Philosophy degrees.

Admission. Admission to the M.S. and Ph.D. programs is limited to graduates with bachelor's degrees equivalent to those of the University of Illinois at Urbana-Champaign. Admission is generally limited to undergraduates who have basic backgrounds in organic and physical chemistry, in biology, and in mathematics through calculus. Students lacking such background may be required to obtain it during the course of their graduate study. Admission is also generally limited to students with undergraduate grade-point averages of 4.2 or higher (A = 5.0). For admission, students must have at least a 4.0 average for the last 60 hours of undergraduate work, or the last 60 hours of undergraduate work and total accumulated graduate work, whichever is appropriate.

Master of Science. The Master of Science in Biochemistry may be completed with or without a thesis. A course-work master's degree requires a minimum of two full-time semesters and involves 8 units of formal lecture and laboratory course work, with at least 3 of those units in 400-level courses. A Master of Science degree with thesis usually requires a minimum of three semesters' work, and 3 of the 8 required units may be thesis research.

Doctor of Philosophy. The Ph.D. candidate in biochemistry must pass an oral research qualifying examination within the first eighteen months of residency, and successfully complete a series of written cumulative examinations. Four-and-one-half units of biochemistry course work and 3 to 4 units of course work outside of biochemistry are required. A thesis based on original research must be presented to a review committee at least two weeks prior to the final examination. The final examination is limited to a defense of the thesis research. The Ph.D. degree program usually takes four to five years for completion. Experience in teaching is considered a vital part of the graduate program and is required as a part of the academic work of all Ph.D. candidates in this department.

Financial Aid. Financial aid for graduate students in biochemistry is available in the form of traineeships, fellowships, and teaching and research assistantships. A training grant from the National Institutes of Health supports a multidisciplinary training program. The department usually supplements trainee stipends during the academic year with a quarter-time teaching assistantship for one semester and a 10-percent appointment in the other semester.

Chemical Engineering

Head of the Department: C. A. Eckert
Correspondence and Information: Head, Department of Chemical Engineering, University of Illinois at Urbana-Champaign, 113 Roger Adams Laboratory, 1209 West California Avenue, Urbana, Illinois 61801

GRADUATE FACULTY

Professors: R. C. Alkire, H. G. Drickamer, C. A. Eckert, T. J. Hanratty, J. W. Westwater
Associate Professors: A. J. McHugh, M. A. Stadtherr
Assistant Professors: J. J. L. Higdon, R. S. Larson, R. I. Masel, J. A. Shaeiwitz

Graduate Degree Programs. The Department of Chemical Engineering offers graduate work leading to the Master of Science and the Doctor of Philosophy degrees. Those interested should write to the address above for application materials and a departmental brochure which gives greater detail on programs, offerings, admission, degree requirements, and financial aid.

Admission. Candidates for advanced degrees in chemical engineering should have a background in chemistry and chemical engineering comparable to the training offered in the undergraduate chemical engineering curriculum at the University of Illinois at Urbana-Champaign. Students whose prior training is deficient in one or more basic areas of chemistry or chemical engineering will be admitted with deficiencies to be removed to the extent prescribed by their advisers. Graduate College admission requirements also apply.

Master of Science. Requirements for the Master of Science include 8 units of graduate credit and a thesis. At least 5 of these units must be in courses other than thesis research; 2 of the 3 required 400-level units must be in chemical engineering courses.

Doctor of Philosophy. Requirements include 24 units of graduate credit, satisfactory performance on qualifying and certification examinations, and a thesis. The credit requirement includes a minimum of four graduate-level courses in chemical engineering and a coherent program of at least four courses in one or two other departments. The qualifying examination is a written test normally taken after one year of study. The certification examination is an individual oral examination taken after the student has satisfied the course requirements. It focuses on the student's proposed thesis research.

Chemistry

Head of the Department: H. S. Gutowsky
Associate Head: J. P. Hummel
Correspondence and Information: Head, Department of Chemistry, University of Illinois at Urbana-Champaign, 108 Noyes Laboratory, 505 South Mathews Avenue, Urbana, Illinois 61801

GRADUATE FACULTY

Professors: D. E. Applequist, P. Beak, R. L. Belford, T. L. Brown, D. Chandler, R. M. Coates, D. Y. Curtin, R. S. Drago, H. G. Drickamer, L. R. Faulkner, H. S. Gutowsky, G. P. Haight, Jr., D. N. Hendrickson, J. P. Hummel, J. Jonas, J. A. Katzenellenbogen, W. G. Klemperer, N. J. Leonard, J. C. Martin, I. C. Paul, W. H. Pirkle, K. L. Rinehart, Jr., G. B. Schuster, D. H. Secrest, J. R. Shapley, S. G. Smith, O. C. Uhlenbeck, P. E. Yankwich
Associate Professors: R. B. Gennis, J. D. McDonald, T. A. Nieman, E. Oldfield, P. G. Wolynes
Assistant Professors: A. J. Arduengo III, J. P. Avery, K. D. Cook, S. E. Denmark,

D. D. Dlott, C. E. Dykstra, J. M. Lisy, T. B. Rauchfuss, A. Scheeline, R. A. Scott, K. S. Suslick

Graduate Degree Programs. The degrees offered in chemistry are Master of Arts or Master of Science in Chemistry, Master of Science in the Teaching of Chemistry, and Doctor of Philosophy in Chemistry. Attention is also called to a joint program leading to the Doctor of Philosophy in Chemical Physics (see page 77) and to the programs in biophysics (see page 131) and in biophysical chemistry (see below).

Admission. Students who have fulfilled the usual undergraduate course requirements, including at least 25 properly distributed semester hours in chemistry, may be considered for admission to the Graduate College in any of the programs offered by the Department of Chemistry. Students who have completed graduate work in chemistry at another institution may be considered for admission if they have averages of 4.0 (A = 5.0) in both undergraduate and graduate work, or if they have earned a 4.25 average in at least 8 units or a full year of graduate work at an accredited institution. Students applying for admission to the program in the teaching of chemistry are expected to have a valid secondary teaching certificate or to make arrangements for obtaining one before completing the requirements for the degree.

Master of Science in the Teaching of Chemistry. Candidates for the Master of Science in the Teaching of Chemistry must earn 4 units of credit in chemistry, 2 units in education, and 2 units of electives in either education or physical science. The 2 units in education consists of courses in educational policy studies and educational psychology (see page 92). The courses in chemistry and the electives must be selected with the approval of the adviser. No thesis is required. Questions concerning the Teaching of Chemistry Program should be addressed to Professor D. H. Secrest, 155 Noyes Laboratory.

Master's Programs in Chemistry. Eight units of credit are required for the master's degrees. The programs leading to degrees of Master of Arts or Master of Science in Chemistry are designed to be completed in one year of full-time study by students entering without deficiencies. A research thesis is optional. If a thesis is elected, 5 units of formal courses are required, 3 of which must be 400-level courses. Of these 3, 2 must be in chemistry. If a thesis is not elected, an additional 3 units of formal courses are required.

Doctor of Philosophy. Doctoral programs are offered in a wide range of specialities, including the traditional areas of analytical, inorganic, organic, and physical chemistry. Students usually require from three to five years to complete the requirements. A total of 24 units including thesis credit is required. The formal course requirements involve 2½ to 3½ units of 400-level courses in the major area of interest and 2 to 3 units in allied areas or fields. Besides completing formal course work, the students are required to pass a series of written cumulative examinations, pass an oral preliminary examination on research preparation, and submit a thesis on original research which is defended at a final oral examination. (Majors in organic chemistry must also demonstrate a reading knowledge of German.) Although teaching is not a general Graduate College requirement, this department requires Ph.D. candidates to do some teaching as part of their academic work, such experience being considered a vital part of the graduate program.

Program in Biophysical Chemistry. The Department of Chemistry offers an area of specialization in biophysical chemistry. The program is flexible and provides the student with basic training in physical chemistry, physical biochemistry, and biology. Students electing this area should have a solid background in physics and mathematics. Details of the curriculum are decided individually. Interested students should direct inquiries and applications to the head of the Department of Chemistry.

Financial Aid. Support for graduate students is available through fellowships and assistantships. All candidates are considered for these upon application. Graduate stu-

dents making normal progress toward their degree generally receive a tuition waiver, as well as a stipend.

CIVIL ENGINEERING

(Including Environmental Engineering in Civil Engineering and Environmental Science in Civil Engineering)

Head of the Department: J. C. Liebman

Correspondence and Information: Head, Department of Civil Engineering, University of Illinois at Urbana-Champaign, 1114 Nathan M. Newmark Civil Engineering Laboratory, 208 North Romine Street, Urbana, Illinois 61801

GRADUATE FACULTY

Professors: W. C. Ackermann, A. H.-S. Ang, J. E. Baerwald, E. J. Barenberg, R. L. Berger, D. E. Boyce, A. B. Chilton, E. J. Cording, B. J. Dempsey, D. C. Drucker, R. S. Engelbrecht, R. A. Eubanks, B. B. Ewing, W. L. Gamble, E. H. Gaylord, G. R. Gurfinkel, W. J. Hall, J. D. Haltiwanger, W. W. Hay, A. J. Hendron, M. Herrin, H. O. Ireland, H. M. Karara, C. E. Kesler, N. Khachaturian, R. W. Larimore, F. V. Lawrence, J. C. Liebman, L. A. Lopez, W. P. Lowry, J. W. Melin, G. Mesri, R. J. Mosborg, W. H. Munse, J. P. Murtha, D. A. W. Pecknold, J. T. Pfeffer, A. R. Robinson, W. C. Schnobrich, L. R. Shaffer, C. P. Siess, V. L. Snoeyink, M. A. Sozen, J. E. Stallmeyer, J. J. Stukel, W. H. Tang, M. R. Thompson, Y. K. Wen, K. W. Wong, B. C. Yen, J. F. Young

Associate Professors: L. T. Boyer, E. D. Brill, M. I. Darter, J. Ghaboussi, E. E. Herricks, P. K. Hopke, W. H. C. Maxwell, M. C. Romanos, M. T. Suidan, W. H. Walker, H. G. Wenzel

Assistant Professors: V. Alavian, S. H. Carpenter, O. Coskunoglu, J. W. Eheart, C. S. Fisk, D. A. Foutch, R. B. Haber, C. W. Ibbs, J. B. Johnston, R. A. Larson, P. P. Martin, S. L. Paul, S. J. Randtke, B. E. Rittmann, C. F. Scribner, F. Southworth, A. J. Valocchi

Graduate Degree Programs. The Department of Civil Engineering offers graduate work leading to the Master of Science and Doctor of Philosophy in Civil Engineering and in Environmental Engineering or Environmental Science in Civil Engineering.

Emphasis is placed upon advanced study and participation in creative research. Graduate study and research can be pursued in the following general fields: air pollution, aquatic ecology, computer-aided design, construction management, structural analysis and design, foundations, earthquake engineering, environmental engineering or environmental science in civil engineering, geodesy, highway materials, hydraulics and hydrology, liquid-solid waste management, materials engineering, nuclear shielding, ocean engineering, ocean structures, photogrammetry, stream and lake analysis, soil and rock mechanics, structural dynamics, structural mechanics, probability and stochastic processes, systems engineering, transportation, and water resources. Interdisciplinary programs with other departments or colleges can also be arranged.

Admission. Students are admitted with full standing if they hold undergraduate degrees substantially equivalent to those of the University of Illinois at Urbana-Champaign, provided the applicant's preparation is appropriate to advanced study in his or her chosen major field. For additional information, see the department pamphlet "Graduate Study and Research in Civil Engineering and in Environmental Engineering or Environmental Science in Civil Engineering." In general, a 4.0 grade-point average (A = 5.0) for the last 60 hours of the undergraduate program and for any previous graduate work is a minimum requirement for admission to the M.S. program. Requirements for admission to the Ph.D. program are variable, but are normally substantially higher. The Graduate Record Examination is not required, but is highly recommended.

Master of Science. A master's program may be completed in one full-time academic year of study. A candidate for the master's degree must complete at least 9 units without a thesis or 8 units with a thesis. In the latter case, credit is given for thesis work. Three of the units must be in courses numbered in the 400 series, and 2 of these 3 must be taken for grades in the major field. A total of at least 4 units must be in the major field. There are no specific course requirements; individual programs are developed by the student in consultation with his or her academic adviser. At least half of the minimum units required for the degree must be in courses meeting on the Urbana-Champaign campus, or in courses meeting in other locations approved by the Graduate College for residence credit for the degree sought. Although, under certain conditions, a student holding a half-time assistantship for an academic year and a summer can obtain a master's degree in this period of time, normally such students require an additional semester. There are no foreign language requirements in the M.S. program.

Doctor of Philosophy. The degree of Doctor of Philosophy, primarily a research degree, requires from three to five years of graduate study beyond the bachelor's degree. A minimum of 24 units beyond the bachelor's degree or 16 units beyond the master's degree is required. In accordance with Graduate College regulations, 16 units must be completed in residence. The major area of specialization encompasses courses and research which are closely related, but the courses need not necessarily be offered by a single major department. There is no department-wide foreign language requirement. However, the faculties of some areas of specialization may require foreign language proficiency, if essential to the conduct of research in that area. The candidate must demonstrate a capacity for independent research by preparing an original thesis on a topic within the major field of study, must meet the qualifying requirements or examination in the area of specialization, and must pass both preliminary and final examinations.

Financial Aid. Financial aid is available in the form of fellowships, research and teaching assistantships, and tuition and service fee waivers.

CLASSICS

(Including Classical Greek, Classical Philology, and Latin)

Chairperson of the Department: J. K. Newman

Correspondence and Information: Department of the Classics, University of Illinois at Urbana-Champaign, 4072 Foreign Languages Building, 707 South Mathews Avenue, Urbana, Illinois 61801

GRADUATE FACULTY

Professors: J. J. Bateman, G. M. Browne, H. Jacobson, M. Marcovich, J. K. Newman, W. R. Schoedel, L. Zgusta

Associate Professors: D. F. Bright, J. A. Dengate, H. C. Gotoff, H. H. Hock, D. Sansone

Graduate Degree Programs. The Department of the Classics offers graduate work leading to the Master of Arts in Classics, Latin, Greek, and the Teaching of Latin, and the Doctor of Philosophy in Classical Philology. Although the graduate program is designed to provide a thorough education in classical studies in the widest sense, students may concentrate at different stages upon Greek and Latin language and literature (including papyrology, Byzantine and Renaissance authors); classical archaeology; or, in conjunction with the appropriate department, comparative literature, ancient history, ancient philosophy, and classical linguistics. A statement of "Regulations for Advanced Degrees in the Classics" and special programs for prospective secondary school teachers may be obtained from the department office.

Admission. In addition to meeting the admission requirements of the Graduate College, applicants for admission to graduate study in the classics curriculum must ordinarily present at least 20 hours in either Greek or Latin and 15 hours in the other language; candidates for admission to the Greek or Latin curriculum must ordinarily present at least 20 hours in that language. Previous work in ancient history, ancient art and archaeology, philosophy, literary criticism, or linguistics is also required.

Master of Arts. The Master of Arts may be taken in classics, Greek, Latin, or the teaching of Latin. Candidates for this degree must complete 8 units of course work. For the A.M. in Classics: 6 units of Greek and Latin, with at least 2 units in each language and at least 3 units at the 400 level (excluding 400-401); 2 units of electives; and sight-translation examinations in both languages. For the A.M. in Greek (Latin): 5 units in Greek (Latin) with at least 3 units at the 400 level; 3 units of electives; and sight-translation examination in Greek (Latin). With the consent of the student's adviser, up to 2 units of thesis may be counted toward elective credit for the A.M. in Classics, Greek, or Latin. For the A.M. in the Teaching of Latin: 4 units of Latin, including 3 units at the 400 level; 2 units of education courses; and 2 units of appropriate electives.

Doctor of Philosophy. The Doctor of Philosophy is offered only in classical philology, which requires advanced work in both Greek and Latin. Candidates for the Ph.D. program are eligible for acceptance upon completion of the master's degree or its equivalent. Once admitted, they must complete at least 16 additional units. These include 8 units of course work: 6 units in Greek and Latin, with at least 2 units in each language and at least 5 at the 400 level; and 2 units of appropriate electives. The department requires a reading knowledge of two tool languages, German and (usually) French. Knowledge of one of these should be demonstrated at the time of admission to Level II and the other before the start of the second year at Level II. The thesis carries 8 units of credit. Admission to the thesis level requires passing the written preliminary examinations (Greek and Latin sight-translation, history of Greek and Latin literature, and a special author) and the preliminary oral examination.

Financial Aid. Teaching assistantships and University Fellowships are available for the academic year and summer session.

Research Interests. Two periodicals are edited from within the department: *Illinois Classical Studies* and *Bulletin of the American Society of Papyrologists.* The department encourages the development of new ideas in every area of classical learning.

Resources. The separate Classics Library has about 40,000 titles. The Graduate Library Rare Book Room houses the Turyn Archive of Greek manuscript photographs and the American Center of the International Photographic Archive of Papyri.

COMMUNICATIONS

Dean of the College of Communications: James W. Carey
Chairperson of the Graduate Committee: Howard S. Maclay
Correspondence and Information: Chairperson, Graduate Committee in Communications, University of Illinois at Urbana-Champaign, 222b Armory, 505 East Armory Avenue, Champaign, Illinois 61820

GRADUATE FACULTY

Professors: A. M. Barban, J. W. Carey, J. G. Delia, M. E. Fishbein, T. Guback, J. W. Jensen, H. Maclay, R. Merritt, C. E. Osgood, T. Peterson, R. J. Simon
Associate Professors: W. Brewer, C. Christians
Assistant Professors: W. Rowland, E. Wartella, D. C. Whitney

Graduate Degree Program. The program for the Doctor of Philosophy in Communications is administered by the Institute of Communications Research in the College of Communications. It provides a core program in communications and permits advanced specialization in several areas: process, content, and effects of the mass media, including their political, social, and economic aspects; popular culture; persuasion and attitude change; advertising; interpersonal communication; and psycholinguistics. The program applies the methods and disciplines of the social sciences, supported by the humanities, fine and applied arts, and natural sciences, to the basic problems of human communications. It is intended for students who plan careers in teaching such communications subjects as journalism, radio-television, and psycholinguistics; scholarly research on the development, control, and ethics of the mass media; research on public opinion measurement, advertising, communication effects, psycholinguistics, and semantics; and executive jobs in government and industry requiring breadth, perspective, and a scholarly background.

Doctor of Philosophy. The Ph.D. program requires a minimum of 24 units beyond the bachelor's degree. Students working toward a Ph.D. degree normally require from three to five years to complete their work. A full-time student entering the program directly upon receiving a bachelor's degree should expect to take two years of course work and a minimum of one additional year for the preparation of a thesis. Full-time students entering with a master's degree should expect to take a minimum of one year of course work prior to embarking on the dissertation. Doctoral students must pass preliminary examinations covering course work and declared specialties, and a final examination covering the thesis. A master's degree in communications is not offered. Students desiring to complete a master's degree should consider enrolling in the Departments of Journalism or Advertising, or in one of the several departments in the social sciences.

COMPARATIVE LITERATURE

Director of the Program: Bernard Benstock

Correspondence and Information: Director of Graduate Studies, Program in Comparative Literature, University of Illinois at Urbana-Champaign, 2070 Foreign Languages Building, 707 South Mathews Avenue, Urbana, Illinois 61801

GRADUATE FACULTY

Professors: A. O. Aldridge, B. Benstock, W. Hollerer, F. Jost, H. Knust, J. Marchand, R. J. Nelson, H. Tikku

Assistant Professors: M. Palencia-Roth, J. Smarr

Graduate Degree Programs. The Program in Comparative Literature offers graduate work leading to the degrees of Master of Arts and Doctor of Philosophy and is designed to provide a systematic study of subjects and problems common to several literatures. Its purpose is to enable students who have varied linguistic competence and preparation to explore the theory of literature and criticism; the interrelations of several literatures; the main currents, periods, and movements in literary history; the development of literary themes and types; and the relations between literature and the other arts. This interdepartmental program is assisted by an advisory committee consisting of representatives of the departments of modern languages and literatures and the classics. The student's program of study is supervised by an adviser from the Program in Comparative Literature. The journal, *Comparative Literature Studies*, is sponsored by the program.

Admission. In addition to meeting the Graduate College admission requirements, a student entering the program should have an undergraduate major in English, the classics, or a foreign language. Majors in history and philosophy may be accepted

with the special consent of the director of the program. For applicants to the Ph.D. curriculum, the A.M. will function as the qualifying test. Students entering with an A.M. degree from another university or from another department of this University will take the program's A.M. examination at the end of the first semester in lieu of the qualifying test.

Master of Arts. The candidate must demonstrate a competency in at least two foreign languages, as well as in English. Latin is necessary for students planning to specialize in the Middle Ages, the Renaissance, or Neoclassicism. Competency in the languages offered is measured either by the successful completion of one advanced course in the literature of each of the languages chosen or by passing an examination administered by the Program in Comparative Literature with the assistance of an expert in the language concerned. This choice is intended to provide for languages which may not be taught in regular departments.

The candidate must complete 8 units of credit, including a course in theory of literature (Comparative Literature 401) and two seminars in comparative literature selected from Comparative Literature 451, 461, 471, and 481, taught by members of the comparative literature faculty. The other 5 units should be taken in two or three national literatures in a distribution approved by the adviser; at least 5 of 8 units should be taken in courses at the 400 level. The candidate should pass a written examination based on a reading list, which is designed to test knowledge of literary history as well as ability to interpret a literary or critical text.

Doctor of Philosophy. A candidate for the Doctor of Philosophy degree must fulfill the general requirements of the Graduate College in addition to those specified above for the master's degree. Competency must be demonstrated in at least three foreign languages as well as in English. These three languages should coincide with those vital to the student's thesis and area of specialization. The candidate should choose at least 4 units from comparative literature seminars taught by members of the comparative literature faculty. Four additional units of work at the 400 level should be taken in courses regularly offered by the literature departments; among these, courses crosslisted with the Program in Comparative Literature are especially recommended. The candidate is responsible for a knowledge of the history of the literature in one modern language. The student also selects a period of major interest and is responsible for a knowledge of two other literatures in this period, which are considered as minors. The periods may be the Middle Ages, Renaissance, Neoclassicism, and the Enlightenment, or modern (nineteenth and twentieth centuries). Some chronological variations in coordinating the minors will be allowed for students concentrating on East/West relations. A preliminary examination, a four-part written examination based on the individual program, and an oral examination with emphasis on the thesis project must be passed. The candidate must present an acceptable thesis embracing several national literatures and pass a final oral examination on the thesis.

Financial Aid. A limited number of University Fellowships, tuition and service fee waivers, and teaching assistantships, in cooperation with other departments, are available.

COMPUTER SCIENCE

Head of the Department: J. N. Snyder
Chairperson of the Committee on Fellowships, Assistantships, and Admissions: E. M. Reingold
Correspondence and Information: Head of the Department of Computer Science, University of Illinois at Urbana-Champaign, 222 Digital Computer Laboratory, 1304 West Springfield Avenue, Urbana, Illinois 61801

GRADUATE FACULTY

Professors: C. W. Gear, D. Kuck, C. L. Liu, A. Levy, D. Michie, D. Muller, S. Muroga,

W. J. Poppelbaum, S. R. Ray, J. E. Robertson, A. H. Sameh, D. L. Slotnick, J. N. Snyder

Associate Professors: G. G. Belford, R. H. Campbell, M. Faiman, H. G. Friedman, Jr., D. D. Gajski, W. J. Kubitz, D. H. Lawrie, J. W.-S. Liu, R. S. Michalski, M. D. Mickunas, D. A. Plaisted, E. M. Reingold, P. E. Saylor, R. D. Skeel, D. S. Watanabe

Assistant Professors: M. A. Ardis, N. Dershowitz, M. T. Harandi, S. N. Kamin, Y. Sagiv

Graduate Degree Programs. The Department of Computer Science offers graduate work leading to the degrees of Master of Science in Computer Science, Doctor of Philosophy in Computer Science, Master of Science in the Teaching of Computer Science, and a professional degree, Master of Computer Science. Areas of specialization include analysis of algorithms and theory of computation, combinatorics, computer-aided instruction, computer applications in physical and social sciences, computer networks, computer inference and machine learning, computer organization, design automation, digital computer arithmetic, digital systems design, display systems, hardware systems design, information retrieval, knowledge-based systems, microprocessor applications, numerical analysis, pattern recognition, programming languages, software systems, and switching theory.

Admission. Applicants must hold a bachelor's degree equivalent to that granted by the University of Illinois at Urbana-Champaign and have an undergraduate grade-point average for the last 60 semester hours of course work of B or higher. They must have had at least one full course in computer programming. In addition, applicants to the M.S./Ph.D. program should have had at least 20 semester hours of computer science, electrical engineering, mathematics, or physics, including courses in three of the four required for proficiency areas. They must also submit their scores on the Graduate Record Examination's verbal, quantitative, and analytical aptitude tests and are strongly urged to submit an advanced test score preferably in computer science.

A brochure giving more detailed information is available from the departmental office.

Proficiency. Students admitted to the M.S./Ph.D. program must demonstrate proficiency in four basic areas of computer science within their first year of graduate study. They may do so either by passing the departmental general examination offered at the beginning of each fall and spring semester or by satisfactorily completing selected courses from a list available in the departmental office. Two of the basic areas are software and computer organization; the other areas are any two of these three: computer hardware, numerical analysis, and theory of computation.

Master of Science. The M.S. degree requires 8 units, of which at least 4 must be in computer science, and a thesis. Three or more units must be at the 400 level, of which at least 2 must be in computer science and no more than one of these may be Computer Science 499 (thesis research). Full-time students may complete their M.S. degree in one year.

Master of Computer Science. This program does not lead to the doctorate and is designed for two groups of students. The larger group comprises students who enter without an extensive computer science background but nevertheless intend to become heavily involved with computers in their professional careers. The second group is that of students with computer science degrees who are interested in the application of computers to other professional or commercial activities. The M.C.S. degree requires three undergraduate courses, 5 core units in computer science, 4 units in a cognate area, and 4 units of individual study for which a report must be written.

Master of Science in the Teaching of Computer Science. The M.S.T.C.S. program is for prospective teachers of computer science at undergraduate colleges, junior colleges, vocational-technical colleges, and high schools. The M.S.T.C.S. degree requires

4 units in computer science, 2 in education and 2 units in an area relevant to computer science education. Students are also required to complete a teaching project which may be satisfied in various ways, e.g., service as a teaching assistant, past or present employment as a high school or college teacher, practice teaching, or preparation of material for computer-aided instruction.

Doctor of Philosophy. Students admitted to the Ph.D. program must take the departmental qualifying examination by the end of their fourth semester (third semester, if admitted with an M.S. degree). This oral examination is in one of the same five areas in which the general examination is offered, but at a higher level. A student who fails, may take the examination only one more time. The degree requires 16 course-work units (8 units if an M.S. degree has been completed), of which at least 6 must be in computer science, 8 units in thesis research, and a thesis. The preliminary examination is orally administered by a five-person doctoral committee at the onset of the student's research, and the same committee conducts the final examination when the thesis is complete.

DAIRY SCIENCE

Head of the Department: W. R. Gomes
Correspondence and Information: Department of Dairy Science, University of Illinois at Urbana-Champaign, 315 Animal Sciences Laboratory, 1207 West Gregory Drive, Urbana, Illinois 61801

GRADUATE FACULTY

Professors: M. P. Bryant, J. R. Campbell, J. H. Clark, C. L. Davis, W. R. Gomes, M. F. Hutjens, B. L. Larson, J. R. Lodge
Associate Professors: C. N. Graves, M. Grossman, R. B. Hespell, J. L. Robinson, S. L. Spahr
Assistant Professors: E. H. Jaster, M. R. Murphy, R. D. Shanks

Graduate Degree Programs. The Department of Dairy Science offers graduate work leading to the Master of Science and Doctor of Philosophy degrees. Fields of specialization in dairy science include biochemistry, genetics, management, microbiology, nutrition, and physiology of lactation or reproduction.

Master of Science. In addition to meeting Graduate College admission requirements, the student must demonstrate proficiency in physical and biological sciences at the undergraduate level and interest in agricultural sciences. A minimum of 8 units of credit, including 5 units of lecture and laboratory classes, ½ unit of seminar, and 2 units of thesis research, is required. At least 3 units of credit must be in 400-level courses, 2 of these in dairy science. The student is expected to complete the M.S. degree within a two-year period. A comprehensive oral examination concerning the thesis and the disciplines used in the field of dairy science is required. A thesis is required. The thesis requirement may be waived by petition to the department and completion of a minimum of 9 units of credit and a comprehensive oral examination.

Doctor of Philosophy. The student must have completed the M.S. degree in a biological science and must have demonstrated an ability to conduct scientific research and to think logically and clearly. A grade-point average in excess of 4.0 (A = 5.0) is required in lecture and laboratory courses taken for the M.S. degree. A minimum of 7 units of advanced formal courses, 1 unit of seminar, and 8 units of thesis research beyond the M.S. degree is required. The advanced course requirements depend upon the area of study in which the student specializes and upon career objectives. The student is expected to complete the Ph.D. degree within a three-year period beyond the M.S. degree. An oral preliminary examination to assess the ability and preparation of the candidate for thesis research is required. The preliminary examination is generally taken after

completion of formal course work and before enrollment in more than 12 units of credit beyond the M.S. degree. A thesis is required, and candidates must pass a final oral examination on the thesis topic.

Financial Aid. Fellowships and graduate assistantships are available on a competitive basis. For M.S. candidates, financial support is limited to two years unless extended by departmental action. Students who accept financial aid from the department are expected to complete their program of study before accepting other commitments.

DANCE

Head of the Department: Patricia K. Knowles
Correspondence and Information: Graduate Program, Department of Dance, University of Illinois at Urbana-Champaign, 4-305 Krannert Center for the Performing Arts, 500 South Goodwin Avenue, Urbana, Illinois 61801

GRADUATE FACULTY

Professor: B. Blossom
Associate Professors: P. K. Knowles, W. Ward
Assistant Professors: C. Donald, A. L. Fisher, L. Lawrence-Powell, R. Sequoio, D. Snyder, C. Wolenski

(The resident faculty is augmented by visiting professional artists who teach advanced studio courses and work primarily with graduate students. The equivalent of one full-time faculty position is reserved for the Artist-in-Residence Program.)

Admissions. Prerequisites for admission are: (1) an undergraduate degree in dance comparable to that granted by the University of Illinois at Urbana-Champaign or equivalent experience (students who are deficient in undergraduate course work may be admitted but will be expected to make up any deficiencies) and (2) demonstrated advance technical skill and choreographic ability (candidates must pass a qualifying audition to confirm advance technical proficiency and to demonstrate facility in choreography).

Graduate Degree Program. The M.F.A. Program in Dance is a practice-oriented, terminal degree program for students in performance and choreography. Fourteen units and a minimum two-year (4 semester) residency are required for this degree. Course work taken to complete undergraduate deficiencies may increase the residency requirements to 5 or 6 semesters. A culminating creative project (Dance 498, 2 units) must be approved and accepted by the graduate faculty. Eleven-and-a-half units are required in the areas of technique, choreography, performance, production, independent research, theory, seminar, and the culminating project. The remaining 2½ units of electives may be taken in dance or in related areas of interest. The candidate's ability to pursue graduate study will be assessed regularly, and he or she will be advised accordingly.

Financial Aid. A limited number of fellowships, assistantships, and tuition and service fee waivers are available to qualified students.

ECONOMICS

Chairperson of the Department: P. Uselding
Director of Graduate Studies: L. D. Neal
Correspondence and Information: Department of Economics, University of Illinois at Urbana-Champaign, 330 Commerce Building (West), 1206 South Sixth Street, Champaign, Illinois 61820

GRADUATE FACULTY

Professors: W. Baer, R. Brandis, H. J. Brems, J. F. Due, M. Ferber, M. Frankel, J. R. Giertz, R. W. Gillespie, F. M. Gottheil, P. T. Hartman, A. J. Heins, D. R. Hodgman, G. G. Judge, W. W. McMahon, J. R. Millar, L. J. Mirman, L. D. Neal, P. Newbold, J. D. Phillips, R. W. Resek, A. E. Roth, P. Schran, F. R. Shupp, J. L. Simon, C. M. Sprenkle, K. Taira, S. Turnovsky, P. Uselding, P. J. Wells, T. A. Yancey

Associate Professors: R. J. Arnould, J. Atack, F. Blau, J. K. Brueckner, D. Coes, W. Hendricks, R. D. Husby, L. Kahn, J. H. Leuthold, S. Rashid, R. N. Schoeplein, J. L. Smith, S. W. Steinkamp, T. Ulen, H. F. Williamson, Jr.

Assistant Professors: L. D. Arvan, J. Graham, S. Matthews, F. Schoumaker, L. G. Thomas

Graduate Degree Programs. The Department of Economics offers graduate work leading to the Master of Arts, Master of Science, and Doctor of Philosophy degrees. The candidate for an advanced degree may specialize in the following fields: economic theory, environment and natural resources, history of economic thought, public finance, monetary theory, international economics, economic history, labor economics, growth and development, comparative economic systems, urban and regional economics, mathematical economics, econometrics, industrial organization, transportation, and human resource economics.

Admission. In addition to the standard undergraduate preparation in economics, the student is expected to have had at least two semesters of calculus and one of linear algebra. The results of the Graduate Record Examination should accompany applications for admission. The Graduate College admission requirements apply.

Master of Arts or Master of Science. There are two ways to earn the A.M. or M.S. degree. Students seeking only a master's degree are encouraged to take Program I, which requires 8 units of credit and submission of an acceptable thesis. The 8 units must include 2 units of theory, 1 unit of statistics (or demonstration of proficiency), and 1 unit of economic history or history of economic thought (or demonstration of proficiency), as well as 2 units of thesis work. Program II requires 12 units of work, including the 4 units of basic course work described for Program I, 2 units in a specialized field in economics, and 6 additional units, 3 in economics and 3 in electives.

Doctor of Philosophy. A total of 24 units of study beyond the bachelor's degree must be completed. Requirements include 1 unit in economic history, 1 unit in history of economic thought, 2 units in statistics and econometrics (some or all can be met by demonstration of proficiency), and 8 doctoral thesis units. The candidate is also required to pass written preliminary examinations in economic theory and in three specialized fields, including at least two in economics (course work with appropriate grades may be substituted for one of the three examinations). The normal preparation for these preliminary examinations is 4 units of study in economic theory and 2 units of study in each of the specialized fields. In addition, the candidate is required to give an oral defense of the thesis proposal and pass an oral final examination covering the research. Students with an appropriate background in economics and mathematics who devote full time to graduate work can complete the Ph.D. degree in three years beyond the bachelor's degree. An additional year or more is usually necessary, however, for those holding part-time assistantships.

Financial Aid. The Department of Economics has been able to offer over the past few years fellowships or half-time assistantships to all domestic students who meet the standards for entrance or continuation in the program. A similar commitment to domestic students is anticipated for the coming year; almost no foreign students receive financial assistance in the first year of the program.

EDUCATION

(Including Administration, Higher, and Continuing Education; Educational Policy Studies; Educational Psychology; Elementary and Early Childhood Education; Secondary Education; Special Education; and Vocational and Technical Education)

Dean of the College of Education: Joe R. Burnett

Correspondence and Information: M. S. Lilly, Associate Dean for Graduate Programs, College of Education, University of Illinois at Urbana-Champaign, 120 Education Building, 1310 South Sixth Street, Champaign, Illinois 61820

GRADUATE FACULTY

Professors: R. C. Anderson, L. A. Braskamp, P. G. Braunfeld, A. Brown, M. Burlingame, J. R. Burnett, J. C. Campione, R. J. Colwell, J. Corbally, C. B. Cox, R. B. Davis, T. Denny, D. Durkin, J. Easley, R. H. Ennis, R. N. Evans, E. L. Evertts, W. Feinberg, L. R. Goulet, M. B. Griggs, N. E. Gronlund, L. W. Harmon, L. W. Heal, P. E. Hemp, R. A. Henderson, J. Hill, E. R. House, L. G. Humphreys, W. D. Johnson, R. S. Jones, L. J. Jordan, C. J. Karier, M. B. Karnes, L. G. Katz, H. Kazanas, H. H. Lerch, M. S. Lilly, R. L. Linn, M. L. Maehr, T. Manolakes, G. McConkie, C. J. McIntyre, F. McMurray, L. E. Metcalf, A. Ortony, P. D. Pearson, A. Peshkin, A. C. Purves, S. P. Quigley, J. D. Raths, F. A. Rodgers, B. V. Rosenshine, L. J. Rubin, T. J. Sergiovanni, R. A. Smith, H. T. Spitze, B. Spodek, R. L. Sprague, R. E. Stake, M. M. Tatsuoka, R. M. Tomlinson, K. J. Travers, P. C. Violas, J. L. Walker, T. L. Wentling, C. K. West, I. Westbury, J. S. Zaccaria

Associate Professors: E. F. Anderson, J. D. Anderson, T. H. Anderson, S. R. Asher, M. Attwood, R. M. Becher, F. S. Coombs, J. R. Dennis, D. L. Essex, H. S. Farmer, J. Farmer, J. A. Fley, M. Gold, O. E. Gould, A. Grotelueschen, G. A. Hoke, H. R. Kaczkowski, K. R. Koenke, D. W. Leslie, J. W. Loeb, A. L. Madsen, J. Mason, E. F. McClure, H. Moses, R. E. Nelson, L. A. Phelps, M. J. Phillips, W. H. Redd, M. Shorish, H. J. Sredl, R. J. Spiro, J. Stern, B. E. Swanson, E. R. Terwilliger, P. W. Thurston, M. G. Wade, J. L. Wardrop, C. M. Weller, K. G. Witz, B. A. Yates

Assistant Professors: R. Albert, C. Blankenship, D. C. Brandenburg, E. R. Bredo, G. A. Cziko, T. G. Geske, J. J. Hirstein, L. Idol-Maestas, G. R. Karlan, C. E. Kozoll, J. Leach, S. R. Levy, R. E. Nelson, J. C. Ory, P. S. Riegel, F. Rusch, M. A. Siegel, H. R. Smock, K. K. Tatsuoka, S. R. Trollip, J. C. Votruba, J. A. Walker

Professors Emeriti: C. Allen, H. S. Broudy, J. T. Hastings, D. Henry, J. M. Hunt, W. McLure, W. J. Moore, C. H. Patterson, L. J. Phipps, F. M. Raubinger, H. Shores, R. H. Simpson, J. M. Slater, L. R. Tucker

Graduate Degree Programs. The College of Education offers graduate work leading to the Master of Education, the Master of Arts, the Master of Science, the Advanced Certificate, the Doctor of Education, and the Doctor of Philosophy degrees.

Graduate students in the College of Education may enroll in one of the seven departments within the college listed at the beginning of this statement. The following suggests the broad range of specialties available within the college: agricultural education; aesthetic education; bilingual multicultural education; business, office, and distributive education; comparative education; continuing and adult education; computer applications in education; counseling psychology; early childhood education; educational administration and supervision; educational psychology; elementary school subject specialties (mathematics, language arts, science, social sciences); statistics and measurement; health occupations education; higher education; history of education; educational policy analysis; home economics education; human development; industrial education; language development; learning and instruction; philosophy of education; quantitative and evaluative research methodologies; reading; rehabilitation counseling; secondary education (English, mathematics, science, social

science); sociocultural perspectives; special education: (a) special learning and behavior problems, severe behavioral handicaps, early childhood education, vocational education for students with special needs, skills improvement, and (b) program administration; and teacher education (elementary, secondary, vocational, special). Other areas of specialization within education may be developed by the student and adviser. More detailed descriptions of specializations offered within departments are available through departmental offices.

Certification. State certification as a teacher or administrator is required for advanced graduate study in some fields. The Council on Teacher Education functions as the all-University governance system for certification. Graduate students who wish to qualify for the council's recommendation for a teaching certificate must complete the appropriate undergraduate or graduate program, or its equivalent. Individual exceptions must be sought via petition to the council. Students are invited to contact the coordinator of the Council on Teacher Education to ascertain the approval status of each program with the Illinois State Board of Education.

Master of Education.

Admission. Students may be considered for admission if they are: (1) graduates of an institution awarding a baccalaureate or equivalent degree comparable to that of the University of Illinois at Urbana-Champaign; (2) adequately prepared for advanced study as demonstrated by previous experience, personal qualifications, and scholastic records; and (3) recommended by the proposed department of study. The Graduate College admission requirements apply. Some departments in the College of Education require additional test scores of applicants.

Program Description. Within each of the departments in the College of Education, exists a rich variety of practice-centered programs adaptable to the interests of beginning graduate students. The Master of Education is a professional degree designed for those students who seek a practical understanding for work in the educational professions.

Requirements. A minimum of 8 units of study is required to meet degree requirements, except in educational administration where there is a 10-unit requirement. Students are required to take Educational Psychology 311 and 312, plus two ½-unit courses in the social and philosophical foundations area within the Department of Educational Policy Studies. One ½-unit course is selected from the social foundations area: Educational Policy Studies 300, 302, 303, 309, 310, and 315. A second ½-unit course is selected from the philosophical foundations area: Educational Policy Studies 301, 304, 305, 306, and 307. (Students may take proficiency examinations in any of these required courses.) Three units of 400-level courses in education are required, and the program is completed by additional 300- or 400-level courses selected by the student in consultation with the academic adviser. Individual departments in the college may require courses beyond these minima to complete a student's program. The credit–no credit option may not be used to meet the minimum 8-unit requirement for this degree. No thesis is required for the Ed.M. degree.

Residence. Four of the 8 minimum units must be taken in residence courses or in off-campus courses designated as carrying residence credit. Summer session courses can be used to fulfill residence requirements; a maximum of 2½ units may be taken in a summer session.

Master of Arts and Master of Science. Admission requirements are the same as those for the Master of Education degree.

Program Description. An extensive offering of research-based programs may be found in the college. All the specialties listed earlier may be pursued from a research perspective. The A.M. and M.S. are research-oriented degrees designed for students who seek research careers in education-related fields.

Requirements. A minimum of 8 units of study is required, except in educational administration where there is a 10-unit requirement. Students are required to take Educational Psychology 311 and 312, plus two ½-unit courses in the social and philosophical

foundations area within the Department of Educational Policy Studies. One ½-unit course is selected from the social foundations area: Educational Policy Studies 300, 302, 303, 309, 310, and 315. A second ½-unit course is selected from the philosophical foundations area: Educational Policy Studies 301, 304, 305, 306, and 307. Students may take proficiency examinations in any of these required courses. Three units of 400-level courses in education are required. Individual departments may require courses beyond these minima to complete a student's program. The credit–no credit option may not be used to meet the minimum 8-unit requirement for this degree. No more than 2 units of thesis credit count toward the minimum 8 units.

These programs require a year of resident study. Each student must defend the required thesis in an oral examination before a committee of three faculty members chaired by the student's adviser.

Advanced Certificate in Education.

Admission. A master's degree in an appropriate field and two years of successful professional education experience are required for admission to the advanced certificate program. Some advanced certificate programs require students to submit Miller Analogies Test scores for admission.

Program Description. The advanced certificate may be pursued in administration, higher, and continuing education; educational psychology; elementary and early childhood education; secondary education; special education; and vocational and technical education. The advanced certificate program is intended for students who desire a planned course of study beyond the master's degree, but do not wish to pursue the type of scholarly work typically expected in a doctoral program.

Requirements. A minimum of 8 units beyond the master's degree is required for the degree. Four units must be at the 400 level. A student who has not previously taken one ½-unit course from the social foundations area: Educational Policy Studies 300, 302, 303, 309, 310, and 315; and a second ½-unit course from the philosophical foundations area: Educational Policy Studies 301, 304, 305, 306, and 307; and both Educational Psychology 311 and 312 must do so or pass proficiency examinations for these courses. The credit–no credit option may not be used to satisfy the minimum requirements for this degree. At least 4 units must be taken in residence or in courses designated as carrying residence credit; up to 4 units of work may be taken in extramural courses.

Doctor of Education.

Admission. Applicants for study leading to doctoral degrees must submit a complete application for admission, including three letters of reference, official transcripts of all previous undergraduate and graduate work and a confidential information form. In addition, some departments within the college require either the Miller Analogies Test or Graduate Record Examination, as well as other tests. Departments should be contacted concerning their requirements for submission of test scores and other information. The applicant must hold a master's degree with a major in education or another related subject from an institution awarding a degree comparable to the University of Illinois at Urbana-Champaign. The general admission requirements of the Graduate College must be met.

Program Description. Students may study any of the broad range of specialties listed on page 91. Programs leading to the Doctor of Education degree are designed to provide advanced professional training and to develop further ability in the scholarly study of professional practice-centered problems.

Requirements. Sixteen units of course work beyond the master's degree are required. Extramural credit may not be counted in this requirement. A student who has completed course work taken as part of the requirements for the Advanced Certificate in Education at the University of Illinois at Urbana-Champaign may petition for the application of not more than 6 units of such work toward the program leading to the Doctor of Education, provided that the course work has been taken within five years of the date of petition. Within the required 16 units, students must complete two perspective course options of 2 units each, designed to help them understand and inter-

pret their developing practitioner-scholar role. Options are chosen from an approved list of courses in several areas. Between admission and completion of degree requirements, an Ed.D. student must complete a supervised field work experience for which from 1 to 4 units credit may be awarded.

Minimum residence requirements may be met by on-campus registration for either two consecutive semesters with at least 3 units of course work in each, or one semester with at least 3 units, plus at least 1½ units in the summer session immediately preceding or following.

Near the end of course work and before admission to the preliminary oral, the applicant must take a minimum of ten hours of written examinations, eight in the special field of study and two in research methodology. Additional written or oral examinations may be required by some departments or areas of specialization. Each portion of the examination is read and evaluated separately by three readers. All parts of the examination must display competent doctoral work to all readers.

In addition to the 16 units of course work, an Ed.D. candidate must complete a thesis in accordance with the general requirements of the Graduate College.

Doctor of Philosophy.

Admission. The applicant must hold a master's degree with a major in education or another related subject from an institution awarding a degree comparable to the University of Illinois at Urbana-Champaign. The Graduate College admissions requirements apply. Applicants must submit a complete application for admission, including three letters of reference, official transcripts of all previous undergraduate and graduate work, and a confidential information form. In addition, some departments within the college require either the Miller Analogies Test or Graduate Record Examination, as well as other tests. Departments should be contacted concerning their requirements for submission of test scores and other information.

Program Description. Students may study any of the specialties listed on page 91. The Ph.D. program is planned by each student with an adviser to develop the student's ability to do scholarly research in a specialized field of education.

Requirements. Sixteen units of resident credit beyond the master's degree, including up to 8 units of thesis credit, are required for the Ph.D. degree. A candidate who has not written a master's thesis is required to prepare, submit, and defend an equivalent paper. Each Ph.D. candidate in the College of Education completes, as a part of the graduate program, an approved supervised professional work experience that consists of at least the equivalent of one-half–time work for a semester. This requirement is to be completed during the period between admission and completion of degree requirements. Acceptance of credit for work earned elsewhere does not reduce the residence credit requirement. A residence period, beyond the master's, must include two successive semesters on the Urbana-Champaign campus, in each of which the student takes a minimum of 3 units.

A student is required to demonstrate competence in one of several research methodology areas. This requirement is in addition to the minimum of 16 units of resident credit. Research methodology area requirements are available from the Graduate Programs Office, College of Education.

A Ph.D. candidate must complete a minimum of eight hours of written examinations in an area of specialization. Examinations are taken in two parts of four hours each. Additional written or oral examinations may be required by some departments or areas of specialization. Each portion of the examination is read and evaluated separately by at least three readers. All parts of the examination must display competent doctoral work to all readers.

A Ph.D. candidate must complete a thesis in accordance with the general requirements of the Graduate College.

Financial Aid. All major doctoral programs have teaching and research assistantships available. Some fellowships and tuition and service fee waivers are also available. In the past it has been possible for a majority of doctoral students to receive some form of financial aid during their period of study. Additional information concerning financial aid can be obtained from the seven departmental offices listed on page 91.

ELECTRICAL ENGINEERING

Head of the Department: G. W. Swenson, Jr.

Correspondence and Information: Department of Electrical Engineering, University of Illinois at Urbana-Champaign, 155 Electrical Engineering Building, 1406 West Green Street, Urbana, Illinois 61801

GRADUATE FACULTY

Professors: R. Adler, G. E. Anner, R. B. Ash, D. L. Bitzer, S. A. Bowhill, R. M. Brown, R. T. Chien, A. Cho, P. D. Coleman, J. M. Crowley, J. B. Cruz, Jr., E. S. Davidson, G. Deschamps, T. A. DeTemple, F. Dunn, J. D. Dyson, W. L. Emery, E. W. Ernst, O. L. Gaddy, C. S. Gardner, P. Handler, D. F. Hang, K. Hess, N. Holonyak, Jr., D. F. Holshouser, T. S. Huang, B. J. Hunsinger, P. Kokotovic, B. C. Kuo, S. W. Lee, C. H. Liu, Y. T. Lo, P. E. Mast, W. Mayeda, P. E. Mayes, G. A. Metze, G. H. Miley, R. Mittra, D. E. Muller, S. Muroga, W. R. Perkins, D. Pines, W. J. Poppelbaum, F. Preparata, M. B. Pursley, N. Rao, S. R. Ray, J. E. Robertson, C. T. Sah, C. F. Sechrist, Jr., L. G. Smith, G. E. Stillman, B. G. Streetman, G. W. Swenson, Jr., T. N. Trick, R. J. Turnbull, M. E. Van Valkenburg, J. T. Verdeyen, N. Wax, K. C. Yeh

Associate Professors: J. A. Abraham, M. T. Basar, J. W. Beauchamp, C. A. Cain, J. G. Eden, M. Faiman, W. K. Jenkins, K. Kim, W. J. Kubitz, E. A. Mechtly, H. Merkelo, W. D. O'Brien, Jr., H. V. Poor, P. L. Ransom, D. V. Sarwate, H. G. Slottow, J. R. Tucker, D. L. Waltz, L. Wozniak

Assistant Professors: N. Ahuja, S. K. Avery, D. J. Brown, E. El-Masry, L. A. Frizzell, B. Hajek, N. Hajj, W. K. Jenkins, M. R. Lightner, D. P. Looze, R. L. Magin, H. Morkoc, D. C. Munson, Jr., B. R. Rau, P. W. Sauer, M. S. Schlansker, P. D. Schomer, R. D. Shultz, S. Swamy

Graduate Degree Programs. Graduate study in electrical engineering leading to the degrees of Master of Science and Doctor of Philosophy is offered in four general areas: circuits and systems, which include network synthesis, nonlinear circuits, control systems, and optimization; computers and information systems, which include computers, switching theory, information theory, communication theory, information retrieval, and artificial intelligence; electromagnetic fields, which include antennas, propagation, aeronomy, radio location, and holography; and physical and quantum electronics, which include solid state theory and devices, electrophysics, optical electronics, plasmas, gaseous electronics, and charged particles. In addition, the department cosponsors or participates in interdisciplinary areas of specialization in bioengineering, nuclear engineering, radio astronomy, biomedical instrumentation, ultrasonics, and electronic music.

Admission. To be eligible for admission, a prospective student must have completed, with a grade-point average of 4.0 or better (A = 5.0), an electrical engineering curriculum substantially equivalent to that of the University of Illinois at Urbana-Champaign. Graduates of curricula in the physical sciences and mathematics may also be admitted to advanced study if they have the necessary background to profit from graduate work in electrical engineering.

Master of Science. A minimum of 8 units, including a maximum of 2 units of thesis research, must be completed for the master's degree. At least 4 units must be 400-level courses in electrical engineering (up to 2 thesis units may be counted), including one from a list of specific courses in each of two of the four basic areas. Courses which are required in the undergraduate curriculum at the University of Illinois at Urbana-Champaign cannot be applied to the credit requirements for an advanced degree. No final examination is required for the M.S. degree.

Doctor of Philosophy. All students desiring to enter the doctoral program must take the electrical engineering qualifying examination during the term they earn their seventh unit of graduate credit, excluding Electrical Engineering 499 (Thesis Re-

search) and Electrical Engineering 490 (Seminar in Special Topics). Students who enter with the master's degree take the examination during the first term here. Admission to the doctoral program is based upon the quality of the course work, the qualifying examination, and an assessment of the ability of the candidate to do independent research work.

Eight units of course credit beyond the master's degree or the equivalent, successful completion of the preliminary examination, 8 units of thesis research, a satisfactory thesis, and satisfactory defense of the thesis in a final examination are minimum requirements for the degree of Doctor of Philosophy. If required by the adviser, a student must have one or two minors in addition to the major. A single minor requires 4 units in one field outside the major field, at least 1 of which must be at the 400 level. If two minors are required, each must consist of at least 2 units. Advanced courses in mathematics, physics, physiology, chemistry, nuclear engineering, and other branches of engineering are recommended minors. No foreign language proficiency is required.

Extramural Study. The department offers extramural graduate courses administered by the Office of Continuing Education and Public Service leading to the Certificate in Engineering granted by the office. Requirements for the M.S. degree can be fulfilled by one semester of residence after completing the requirements of the certificate program. For information about this certificate program, write to the Office of Continuing Education and Public Service, University of Illinois at Urbana-Champaign, 112 Illini Hall, 725 South Wright Street, Champaign, Illinois 61820.

Under special circumstances, it may be possible to complete the M.S. degree off campus by taking extramural graduate courses that are designated for residence credit, including the M.S. thesis requirement. Such cases are considered on an individual basis upon petition to the departmental graduate committee.

ENGLISH

Head of the Department: Keneth Kinnamon
Director of Graduate Studies: Dale Kramer
Correspondence and Information: Director of Graduate Studies, Department of English, University of Illinois at Urbana-Champaign, 210 English Building, 608 South Wright Street, Urbana, Illinois 61801

GRADUATE FACULTY

Professors: A. L. Altenbernd, R. Barksdale, N. Baym, B. Benstock, E. Brandabur, J. J. Campbell, D. Curley, M. Dickie, J. P. Frayne, J. Friedman, P. Garrett, G. Hendrick, J. R. Hurt, K. Kinnamon, D. Kramer, L. Lieberman, R. W. Rogers, C. Sanders, R. B. Shuman, A. Stein, J. Stillinger, E. Watts, B. F. Wilkie
Associate Professors: G. Adelman, D. Baron, R. Carringer, H. C. Cole, L. Danielson, J. Dundas, J. Dussinger, C. Fontenot, P. Friedman, A. Guibbory, F. E. Hodgins, A. Kaufman, U. M. Kaufmann, W. D. Kay, J. Klein, C. Kyle, D. Majdiak, H. Marder, M. Mullin, C. Nelson, R. L. Schneider, M. Shapiro, B. Smalley, J. C. Stubbs, Z. Sullivan, L. Waldoff, R. Wheeler
Assistant Professor: B. Michelson

Graduate Degree Programs. The Department of English offers programs of study leading to the Master of Arts, the Master of Arts in the Teaching of English, and the Doctor of Philosophy degrees. The Ph.D. program is, in general, designed to educate and train teacher-scholars who will take up positions in colleges and universities throughout the country. The Master of Arts programs may be either a first step toward the Ph.D. degree or a final educational stage for qualified students who wish to pursue their knowledge of English and American language and literature beyond the undergraduate level. There is no creative writing program.

Admission. A student who wishes to be considered for admission to graduate work in English must present the equivalent of at least 20 semester hours of undergraduate college work in English and American Literature excluding required college work in rhetoric or composition. Applicants are required to submit Graduate Record Examination scores for the verbal and advanced tests. Because applications for admission usually far exceed capacity, in recent years undergraduate grade-point averages of students admitted have been significantly higher than the 4.0 (A = 5.0) required by the Graduate College. The committee on admissions tends to select those applicants showing a solid undergraduate array of courses, knowledge of a foreign language, and real promise of earning degrees within a reasonable time. Preference is given to applicants who will be full-time students and active degree candidates.

Master of Arts. A candidate for the A.M. in English must spend at least two semesters or the equivalent in residence and complete at least 8 units of course work. At least 3 units must be at the 400 level, and 2 of the 3 must be in English. The student must show a knowledge of one foreign language equivalent to that acquired by three years of undergraduate course work. The student must pass one formal examination, the master's comprehensive examination. A full-time student can complete this program in an academic year.

Master of Arts in the Teaching of English. A candidate for the M.A.T.E. degree must spend at least two semesters or the equivalent in residence. Certified teachers may qualify for the degree by completing an approved program consisting of 4 units of English, 1 unit of English methods, 2 additional units in education, and one elective, usually in English. The student must show a knowledge of one foreign language equivalent to that acquired by three years of undergraduate course work. Candidates entering the program without a teaching certificate must complete courses which are specified for certification, including a supervised teaching internship, as well as meeting the other requirements of the degree. There is one formal examination, a comprehensive examination based on course program. Inquiries may be made to the M.A.T.E. adviser, 294c English Building.

Doctor of Philosophy. A student wishing to continue beyond the master's degree must apply formally and is considered in competition with applicants who are taking the master's degree elsewhere. Seldom are applicants accepted with graduate averages below 4.5. Students who have taken their Master of Arts degrees elsewhere must pass the master's comprehensive examination during their first year of residence and give evidence of knowledge of one foreign language on a level equivalent to that required of A.M. candidates in our program. (The master's comprehensive examination can be waived by the director of graduate studies if the candidate submits appropriate evidence that a similar examination formed part of his or her master's degree.) The student takes 8 units of course work, planned in consultation with a two-member advising committee. There are no general requirements for further foreign language work, philology-linguistics, or outside minors, although certain fields of specialization do require further work along these lines. There is one formal examination, the special field examination, which is normally taken as the student completes course work and prepares to write the thesis. The student then goes on to write a thesis under the direction of a committee composed of three professors. A total of 16 units beyond the master's degree, including thesis credits, are required. A full-time student can complete this program in three years beyond the master's degree.

Financial Aid. Financial aid is available to students in the form of fellowships, teaching assistantships, and waivers of tuition and service fees. Applicants are considered at only one time of the year, and the deadline for submitting applications is February 15. For complete information about the program, prospective applicants should write to the above address for the department's handbook on graduate studies in English.

ENGLISH AS A SECOND LANGUAGE

Director of the Division: H. Douglas Brown

Correspondence and Information: Director, Division of English as a Second Language, University of Illinois at Urbana-Champaign, 3070 Foreign Languages Building, 707 South Mathews Avenue, Urbana, Illinois 61801

GRADUATE FACULTY

Professors: K. Aston, Y. Kachru
Associate Professors: L. Bouton, H. D. Brown, J. R. Cowan, W. Dickerson
Assistant Professors: L. Bachman, L. Dickerson

Graduate Degree Program. The Division of English as a Second Language offers a Master of Arts in the Teaching of English as a Second Language (M.A.T.E.S.L.).

Admission. In addition to meeting the Graduate College admission requirements, applicants should present evidence of appropriate academic preparation in a relevant discipline such as English, linguistics, a foreign language, or a teacher-training curriculum in one of the above or in elementary education. Native speakers of English must have studied at least one foreign language for four semesters or the equivalent, or demonstrate an acceptable proficiency in a foreign language. Nonnative speakers of English must demonstrate an acceptable proficiency in English by attaining a score of at least 550 on the TOEFL examination. The TOEFL examination is required of all applicants to the M.A.T.E.S.L. curriculum who are not native speakers of English, even when the requirement for that examination has been waived by the University itself.

Master of Arts in the Teaching of English as a Second Language. The program leading to this degree requires a minimum of 8 units, 2 of which must be taken from 400-level courses. Candidates must either pass a written comprehensive examination or complete an honors research project. Normally, the M.A.T.E.S.L. degree can be completed in three or four semesters. The curriculum is interdisciplinary and involves work in such areas as descriptive linguistics, language acquisition, the interrelationship of language and culture, language pedagogy, language testing, teaching English as a second language and bilingual education, and language study. Through the scope and diversity of its courses, the master's program prepares students for both overseas and domestic opportunities.

The Doctor of Philosophy degree, with a specialization in the teaching of English as a second language, is available both through the College of Education and through the Department of Linguistics. In either of these options, members of the graduate faculty of the Division of English as a Second Language are available to serve on the various doctoral committees, and English as a second language courses help to form the base of the specialization itself. Applicants interested in working toward a doctorate in this area should write to, Associate Dean for Graduate Programs, College of Education, or Head, Department of Linguistics.

Financial Aid. Financial assistance is not normally awarded during a M.A.T.E.S.L. candidate's first semester. Exceptions to this policy are sometimes made when an applicant has had extensive experience in teaching English as a second language or has an exceptional academic record. Teaching assistantships are normally available to qualified students who have completed their first semester's work.

ENVIRONMENTAL STUDIES

Director of the Institute: Ben B. Ewing
Correspondence and Information: Institute for Environmental Studies, University of Illinois at Urbana-Champaign, 408 South Goodwin Avenue, Urbana, Illinois 61801

GRADUATE FACULTY

Professors: R. J. Burdge, B. B. Ewing, D. M. Gardner, L. G. Hansen, W. P. Lowry, R. L. Metcalf, G. L. Rolfe, W. D. Seitz
Associate Professors: E. D. Brill, Jr., P. K. Hopke, L. D. Hopkins
Assistant Professors: J. D. Absher, J. S. Black, R. W. Carlson, B. M. Francis, G. V. Johnson, J. B. Johnston, R. A. Larson, J. J. Plewa

The Institute for Environmental Studies coordinates and supports programs of research, teaching, and public service in areas related to environmental quality. Although the institute does not offer degree programs, it contributes to graduate education by conducting graduate-level courses on environmental subjects and by providing opportunities for students working within specific disciplines to participate in interdisciplinary and multidisciplinary research.

The institute's close ties with many other campus units make it possible for students seeking graduate degrees from those units to engage in environmental research within the institute's varied interdisciplinary program. Current scholarly research at the institute addresses a wide range of significant environmental problem areas, including environmental toxicology of pesticides, environmental mutagens and carcinogens, water quality and water resources management, air pollution and source contribution resolution, effects of pollution on biological systems, environmental chemistry, social and economic impacts of resource development, control of nonpoint source pollutants, analysis of environmental decision making and alternative pollution control methods, and environmental planning. This research program involves faculty with backgrounds in such diverse fields as genetics, chemistry, physics, biology, ecology, engineering, economics, sociology, and law.

A major interdisciplinary program of teaching and research recently initiated at the institute concerns environmental mutagens and carcinogens. This program detects and identifies mutagenic substances; determines their sources, transport, transformations, and fate in the environment; evaluates exposures to target organisms; and evaluates the economic and societal impacts of these exposures. The ultimate objective of the program is to promote the wise management of these substances using all possible technical, economic, and social resources. This program complements the interdisciplinary graduate degree specialization in environmental toxicology previously established by the institute.

Further information on opportunities for graduate education in environmental studies at the University of Illinois at Urbana-Champaign is provided in *Environmental Graduate Programs,* a brochure available from the institute. Also available is a comprehensive listing of environmentally oriented courses currently offered by the institute and by other campus units.

EXTENSION EDUCATION

Head and Graduate Adviser: Violet M. Malone
Correspondence and Information: Extension Education, University of Illinois at Urbana-Champaign, 330 Mumford Hall, 1301 West Gregory Drive, Urbana, Illinois 61801

Graduate Degree Program. The Master of Extension Education degree program is a professional program providing advanced study in agriculture and in human resources and family studies, including further study in the social sciences.

Admission. Applicants are expected to possess a bachelor's degree in agriculture, home economics, or a closely related field, and meet the Graduate College admission requirements.

Degree Requirements. The program consists of a minimum of 8 units with a thesis or 9 units without a thesis. Three units must be in 400-level courses, with 2 of these in the

major field. A major, consisting of 4 units, may be taken in agriculture, human resources and family studies, or the social sciences. Students majoring in agriculture or human resources and family studies select 4 additional units from the social sciences; those majoring in the social sciences select 4 additional units from agriculture or human resources and family studies. All courses selected must be approved by the student's adviser. If a thesis is not submitted, the ninth unit may be selected in any area approved by the adviser. At least 4 units must be earned in residence on the Urbana-Champaign campus.

FINANCE

Chairperson of the Department: Charles M. Linke
Correspondence and Information: Department of Finance, University of Illinois at Urbana-Champaign, 340 Commerce Building (West), 1206 South Sixth Street, Champaign, Illinois 61820

GRADUATE FACULTY

Professors: W. R. Bryan, J. A. Gentry, C. F. Lee, C. M. Linke, R. I. Mehr
Associate Professors: K. J. Carey, P. F. Colwell, M. J. Lynge, Jr., J. K. Zumwalt
Assistant Professors: J. E. Gilster, Jr., R. S. Sears, D. T. Whitford
Professors Emeriti: C. T. Arlt, R. W. Mayer, R. C. Osborn, P. M. Van Arsdell

Graduate Degree Programs. The Department of Finance offers graduate work leading to the Master of Science and Doctor of Philosophy degrees. The following fields are available for specialization: money, credit, and banking; corporation finance; investment; insurance; and urban economics and real estate.

Admission. Students applying for admission to the graduate program should have an adequate undergraduate background in finance, economics, mathematics, statistics, and accountancy, or should be prepared to remove undergraduate deficiencies immediately upon entering the program. The results of the Graduate Management Admission Test must be made available before the application can be considered. Graduate College admission requirements apply.

Master of Science. A candidate for the master's degree must spend at least two semesters in residence. The credit requirement for this degree is 8 units if the student chooses the thesis option or 10 units if he or she chooses the nonthesis option. At least 3 units must be at the 400 level, and 2 of the 3 must be in finance. Two units of economic theory are required under both options. Two units of quantitative analysis are required under the nonthesis option and 1 unit is required under the thesis option.

Doctor of Philosophy. The doctoral program consists of three stages with a total of 24 units beyond the bachelor's degree required. Stage one must include 2 units of economic theory, 4 units of finance, and 2 units either in finance or related fields that apply to the master's degree. The second stage consists of 8 additional units of course work to prepare for written preliminary examinations in two finance areas, economic theory and one other field (which may be an additional area in finance). In certain instances, course work with appropriate grades may be substituted for written preliminary examinations. Prior to taking preliminary examinations, a candidate must obtain credit for the second course in calculus and, at the graduate level, a course in statistics and a course in operations research. The candidate must pass an oral examination devoted primarily to the dissertation proposal. The candidate may earn 8 doctoral thesis units.

FOOD SCIENCE

Head of the Department: Arthur J. Siedler

Correspondence and Information: Director of Graduate Studies, Department of Food Science, University of Illinois at Urbana-Champaign, 567 Bevier Hall, 905 South Goodwin Avenue, Urbana, Illinois 61801

GRADUATE FACULTY

Professors: P. V. Johnston, F. A. Kummerow, R. Nelson, T. Nishida, E. G. Perkins, A. J. Siedler, M. P. Steinberg, W. J. Visek, L. S. Wei, R. M. Whitney, L. D. Witter
Associate Professors: C. Argoudelis, P. Bechtel, M. Cheryan, J. W. Erdman, S. E. Martin, J. A. Milner
Assistant Professors: H. P. Blaschek, R. Speckman, R. Villota

Graduate Degree Programs. The Department of Food Science offers graduate work leading to the Master of Science and Doctor of Philosophy degrees. In addition to receiving training in the general field of food science, students have the opportunity to do research in the following areas of specialization as they relate to food products: processing-engineering, chemistry, microbiology, and nutrition.

Admission. In addition to meeting the Graduate College admission requirements, a student planning to major in food science should have a baccalaureate degree in a recognized field of biological, physical, agricultural, or engineering science. Background deficiencies may be removed with graduate credit courses designed for this purpose.

Master of Science. To obtain a master's degree, a student must have 2¾ units in food science. The remainder of the 8 units of credit required consists of graduate courses selected from inside or outside the department that are appropriate for the training and development of the student in the field of specialization. At least 3 units must be at the 400 level. A thesis may be required at the option of the candidate and adviser. An oral examination covering the field of food science and the area of the candidate's specialization is also required. Students whose native language is not English are required to have competence in English by passing English as a Second Language 111.

Doctor of Philosophy. In addition to the courses required for the master's degree, candidates for the Doctor of Philosophy must have additional credit in seminar (¼ unit) and thesis research (8 units). The remainder of the 16 units required for the degree consists of graduate courses selected from inside or outside the department that are appropriate for training in the student's field of specialization. The student msst demonstrate proficiency in one foreign language or complete a special option approved by the department, which is not counted as part of the 16 required units of credit. Students whose native language is not English must pass English as a Second Language 401. Upon completion of all necessary formal courses and special options, the student is required to take an oral preliminary examination. After passage of the preliminary examination, the student's activities are primarily devoted to thesis research. Upon submission of the thesis, the candidate is admitted to the final oral examination before a graduate faculty committee. The Ph.D. degree in food science may be combined with the study of medicine in the University of Illinois at Urbana-Champaign Medical Scholars Program.

FORESTRY

Head of the Department: G. L. Rolfe
Correspondence and Information: Department of Forestry, University of Illinois at Urbana-Champaign, 110 Mumford Hall, 1301 West Gregory Drive, Urbana, Illinois 61801

GRADUATE FACULTY

Professors: F. A. Bazzaz, P. Chow, A. R. Gilmore, J. R. Karr, G. L. Rolfe

Associate Professor: J. J. Jokela
Assistant Professors: J. D. Absher, S. Brown, J. O. Dawson, G. Z. Gertner, K. R. Livengood, R. A. Young

Graduate Degree Program. The Department of Forestry offers graduate work leading to the Master of Science degree. The Doctor of Philosophy degree is not offered by the department, but qualified students may work toward this degree with a forestry adviser who holds a joint appointment in another department or is on the staff of an interdisciplinary doctoral program. Such areas of study include ecology, economics, genetics, plant physiology, soils, and wood science.

Admission. The prerequisite for graduate study in the Department of Forestry is a bachelor's degree in forestry or a related field. A grade-point average of 4.0 (A = 5.0) in the last 60 semester hours of undergraduate work plus any graduate work completed is required. Those applicants who meet the minimum requirement are encouraged to take the Graduate Record Examination, as exceptions to these prerequisites are permitted on an individual basis. Applicants whose native language is not English must score at least 550 on the TOEFL examination.

Master of Science. To qualify for the Master of Science degree, a student must earn at least 8 units of graduate credit, with at least 3 units in courses at the 400 level. At least half of the 8 units must be from courses meeting on the Urbana-Champaign campus or from courses approved by the Graduate College for residence credit, although meeting at other locations. Depending on their backgrounds, nonforestry graduates may be required to complete certain basic forestry courses in addition to the regular degree requirements. Programs are designed to serve the needs of each student in such areas as biometrics, ecology, economics, genetics, land use, physiology, soils, statistics, and wood science.

In most cases a thesis is required, but it may be waived if such waiver will result in a better program for the individual student. The forestry seminar is required of all graduate students. There are no language or qualifying examination requirements.

Financial Aid. Besides University and other fellowships for which graduate students may compete, the Department of Forestry offers a number of graduate research assistantships ranging from 25- to 67-percent time. Assistants are exempt from tuition and the service fee but not from the health service and insurance fees.

Research Interests. Major areas of faculty research include water quality and watershed management, nutrient cycling, biomass production on Illinois forested bottomlands, forest and water-based recreation valuation, recreational impacts on institutions and forest vegetation, management of forest vegetation in stressed urban settings, utilization of eastern hardwood species and plant residues, forest tree improvement through selection and breeding, properties of wood-base materials, allelopathy, dynamics of forest soils, symbiotic nitrogen fixation by trees and shrubs, and modeling of tree growth.

FRENCH

Head of the Department: Paul Gaeng
Director of Graduate Studies: Emile Talbot
Correspondence and Information: Department of French, 2090 Foreign Languages Building, University of Illinois at Urbana-Champaign, 707 South Mathews Avenue, Urbana, Illinois 61801

GRADUATE FACULTY

Professors: A. O. Aldridge, B. C. Bowen, H. De Ley, P. Gaeng, P. Haidu, F. Jost, F. Marty, R. J. Nelson

Associate Professors: E. Accad, V. Bowen, S. Gray, F. Jenkins, A. K. Mortimer, L. B. Price, S. Savignon, E. Talbot, J. Wirth
Assistant Professors: A. Omaggio, S. Shinall

Graduate Degree Programs. The Department of French offers graduate courses leading to the Master of Arts, the Master of Arts in the Teaching of French, and the Doctor of Philosophy. Candidates for the A.M. degree may specialize in literature, in expanded French studies, or in French linguistics. Candidates for the Ph.D. degree may choose one of four specializations: literature, expanded French studies, French linguistics, or second-language learning and teaching.

Admission. Students are normally considered for admission to the A.M. program who have an overall undergraduate admission average of 4.0 (A = 5.0) with an average in French of 4.5. Students should normally have had a college major in French. Entering students are given a diagnostic test to determine whether remedial study in French language courses is necessary. Some knowledge of other Romance languages and literatures is desirable. Students seeking admission to the Ph.D. program with a Master of Arts degree earned elsewhere are expected to have a 4.5 grade-point average in graduate courses. Their master's degree should be in French literature or in French studies. Candidates seeking admission to the Ph.D. concentration in second-language learning and teaching may hold an M.A.T. degree.

Master of Arts. Candidates in all master's programs must complete 8 units of course work and pass an A.M. examination. Candidates in literature must take an A.M. examination based on a reading list covering the field of French literature. The examination in expanded French studies covers, in addition to readings in the field of French literature, material bearing on the candidate's field of specialization in French culture or related disciplines. The examination in linguistics is based on a list of readings in linguistics and in literature. Candidates in all programs are required to demonstrate, at the time of the master's examination, an ability to communicate effectively in both written and oral French.

Master of Arts in the Teaching of French. An applicant for admission is normally expected to have a bachelor's degree in French teacher education. Candidates for this degree must complete a total of 8 units as follows: 4 units in French civilization, language, and/or literature (excluding French 311, 313, 314), at least 2 of which must be at the 400 level; 1 unit in educational psychology; 1 unit in educational policy studies; and 2 units of electives, one of which must be taken in French. Remedial work in French diction and syntax may also be required of candidates who show deficiencies in these areas. In addition to completion of course work, candidates will be required to pass a comprehensive written and oral examination during their last semester of study, demonstrating a satisfactory level of communicative competence in French and the ability to integrate effectively their knowledge of French language, literature, and culture in developing a philosophy and practice of teaching.

Candidates who do not have teacher certification must complete the undergraduate program in the teaching of French or its equivalent in addition to the requirements for the M.A.T. program described above.

Doctor of Philosophy. Candidates in all programs must complete 16 units beyond the master's degree, including a minimum of 8 units of course work beyond the A.M. degree, and must pass a preliminary examination and write an acceptable thesis. Although teaching is not a general Graduate College requirement, the Department of French requires Ph.D. candidates to do some teaching as part of their academic work, such experience being considered a vital part of the graduate program.

Ph.D. in Literature. This program is designed to prepare literary scholars and teachers. Candidates are required to include courses in research methods and textual criticism, the history of the French language, and French literature. Reading proficiency in one language other than French or English is required, as well as one year of college Latin or the equivalent.

Ph.D. in Expanded French Studies. The doctoral program in expanded French studies allows for research in francophone literature or in the relation of French literature to some nonliterary discipline. Two of the required 8 units of course work beyond the A.M. degree may be taken in other departments or programs when available and approved by the graduate adviser. Candidates are required to include courses in French literature. Reading proficiency in one language other than French or English is required, as well as one year of college Latin or the equivalent.

Ph.D. in French Linguistics. This is a graduate curriculum that offers training in French historical and descriptive linguistics and philology. Students in this program are required to take 3 units in French literature and may elect up to 2 units of related work in other departments, in addition to a required course in the structure of French and either the history of French or a course in Old French. At the doctoral level, a concentration in Romance linguistics is available in cooperation with the Department of Spanish, Italian, and Portuguese; the Department of Linguistics; and the Department of the Classics.

Ph.D. in Second-Language Learning/Teaching. An interdisciplinary concentration in second-language learning/teaching is available to candidates with an A.M. or M.A.T. degree in French and at least one year of experience in teaching French as a second language. Candidates selecting this option are required to complete courses in psycholinguistics, education, and language teaching methodology, in addition to advanced study in French language and culture. Also required are 4 units in research methodology selected from one of several options including linguistics, psychology, computer science, or statistics.

Financial Aid. Assistantships and University Fellowships are awarded. Several graduate students each year spend the school year in France under a graduate exchange agreement with the French government. The department has also initiated an exchange program with the University of Dakar, Senegal, and with the University of Metz, France.

GENERAL ENGINEERING

Head of the Department: J. S. Dobrovolny
Correspondence and Information: T. F. Conry, Department of General Engineering, University of Illinois at Urbana-Champaign, 117 Transportation Building, 104 South Mathews Avenue, Urbana, Illinois 61801

GRADUATE FACULTY

Professors: T. F. Conry, J. S. Dobrovolny, E. N. Kuznetsov
Associate Professors: W. J. Davis, L. D. Metz, M. H. Pleck, L. Wozniak
Assistant Professors: O. Coskunoglu, W. B. Hall, H. L. M. Reis

Graduate Degree Program. The Department of General Engineering offers graduate study leading to the degree of Master of Science. The program consists of a core of required courses including legal problems in engineering design, coordination of engineering design projects, and a design thesis or project. In addition, the student undertakes study in a disciplinary area outside the department.

The master's degree program in general engineering is intended for students interested in engineering project planning and execution, stressing the design function for manufacturing. The program thus offers an approach to engineering that crosses disciplinary lines. Graduates of the program are prepared to enter professional engineering positions in industry, government, and private practice. Students whose career objectives include obtaining the Ph.D. degree should not enter this program.

Admission. Applicants who have completed degree requirements in an accredited engineering program or its equivalent are eligible to apply for admission. Qualifi-

cations for admission include a grade-point average of 4.0 (A = 5.0) for the last 60 hours of undergraduate work.

Master of Science. The minimum requirement for the degree is 8 units of credit with a thesis or 9 units without a thesis. Each candidate must successfully complete a minimum of 2 units of project design (General Engineering 497) for the nonthesis degree or one unit of thesis research (General Engineering 499) for the thesis degree. Each candidate must also successfully complete at least 7 additional units of graduate course work, of which at least 3 units must be at the 400 level.

Financial Aid. Qualified students may apply for financial aid in the form of teaching and research assistantships and waivers of tuition and service fees.

Research Interests. The research interests of the faculty include design optimization, fluidics, biomechanics, systems dynamics and simulation, human factors in design, multilevel systems theory, and computer graphics in design.

GENETICS

Correspondence and Information: E. H. Brown, Chairperson, Genetics Ph.D. Program Committee, University of Illinois at Urbana-Champaign, 515 Morrill Hall, 505 South Goodwin Avenue, Urbana, Illinois 61801

Graduate Degree Program. A Doctor of Philosophy in Genetics program is provided through the cooperative efforts of faculty members from a number of departments and is administered by the Genetics Ph.D. Program Committee. Training is available in molecular, microbial, developmental, population, quantitative and behavioral genetics; applied plant and animal genetics; and cytogenetics and evolution. Experience is provided with a variety of organisms ranging from viruses to vertebrates. Students seeking masters' degrees are directed to departmental programs or to the Master of Science in Biology Program offered by the School of Life Sciences. Financial support is available to qualified students in the form of teaching assistantships, research assistantships, or fellowships. A brochure providing detailed information about the doctoral program may be obtained from the chairperson of the Genetics Ph.D. Program Committee.

Admission. Applicants are evaluated on the basis of their educational background, grade-point average (which must be at least 4.0 = B), Graduate Record Examination scores, research interests and experience, and letters of recommendation. Applicants should have completed college-level courses in inorganic and organic chemistry, trigonometry, analytical geometry, and one year of college physics. Biochemistry and calculus are strongly recommended.

Doctor of Philosophy. During the first year, each student determines a program of study in consultation with an adviser and the Genetics Ph.D. Program Committee. During the first two years, students obtain a broad background in the major disciplines of genetics (molecular and microbial, population or quantitative, and cytogenetics) and complete courses or demonstrate proficiency in biochemistry, calculus, and statistics. Thesis research is carried out under the supervision of a research adviser and a doctoral committee. An oral preliminary examination assessing the student's knowledge of the major disciplines of genetics, the feasibility of the thesis research, and the student's capacity for independent research is taken during the second or third year. The student defends the thesis at an oral final examination.

GEOGRAPHY

Head of the Department: A. Getis

Correspondence and Information: Director of Graduate Admissions, Department of Geography, University of Illinois at Urbana-Champaign, 220 Davenport Hall, 607 South Mathews Avenue, Urbana, Illinois 61801

GRADUATE FACULTY

Professors: C. S. Alexander, J. D. Fellmann, A. Getis, W. P. Lowry, H. G. Roepke, D. B. Shimkin, J. Thompson
Associate Professors: G. J. D. Hewings, J. O. Huff, J. A. Jakle, D. L. Johnson, J. V. O'Loughlin, C. C. Roseman, C. E. Thorn
Assistant Professors: M. A. Brown, J. E. Burt, T. D. Frank

Graduate Degree Programs. The Department of Geography offers work leading to the Master of Arts, Master of Science, Master of Science in the Teaching of Geography, and Doctor of Philosophy degrees. The department's specializations are organized into five programs: (1) economic geography and regional science (industrial location, transportation, techniques of urban and regional analysis, and urban systems); (2) historical geography (historic landscapes, historic preservation, urban morphology, and cultural landscape evolution); (3) geomorphology (coastal, periglacial, soil, and Quaternary studies); (4) social geography (migration, voting behavior, diffusion, and urban analysis); and (5) spatial data management and analysis (quantitative skills, cartography, computer cartography, and remote sensing).

Detailed descriptions of these programs may be obtained from the department office. A program for prospective teachers, the Master of Science in the Teaching of Geography is also available.

Admission. Students applying for admission to the master's programs are expected to have a strong undergraduate background in geography and/or related disciplines. In addition to other Graduate College admission requirements, a grade-point average of at least 4.0 (A = 5.0) in the undergraduate major is required. Ph.D. candidates are generally expected to have at least a 4.5 average in previous graduate work.

Master of Arts and Master of Science. Successful candidates for the master's degree whose backgrounds are largely in physical geography are recommended for the Master of Science; others receive the Master of Arts. The Graduate College requirements for the master's degree apply.

Master of Science in the Teaching of Geography. Candidates for this degree must earn 4 units in geography, 2 of which are geography electives, 2 units in education, and 2 units in electives.

Doctor of Philosophy. Admission presupposes distinction in completing the master's program in geography or its equivalent at the University of Illinois at Urbana-Champaign. In the doctoral program, the student develops depth in the program chosen for specialization and further advances in research competence. Of the 16 units required beyond the master's degree, 4 units of study in allied disciplines and a minimum of 6 additional units in geography are required. A student must complete the course requirements as determined by an individually planned program, initiate and complete research projects, and qualify for candidacy by passing the preliminary examination. Although there is no departmental foreign language requirement, students may offer a foreign language as a research technique.

Financial Aid. Fellowships and teaching and research assistantships are available in the department. See the section on financial aid for a description of the provisions of these awards.

Departmental Facilities. The department houses several laboratories: the Spatial Data Analysis Laboratory provides a research and training facility for the analysis and display of spatial patterns derived from maps, aerial photos, and satellite images. Other laboratories include cartography, remote sensing, photographic geomorphology, and soils; in addition, interactive computer terminals, an X-ray diffractometer, and a vacuum spectrometer are also available.

Map and Geography Library. Contained within the University's outstanding library is the Map and Geography Library which contains an excellent collection of geography monographs, periodicals, and nearly 300,000 maps and aerial photographs.

GEOLOGY

(Including Earth Science)

Head of the Department: John Hower
Educational Coordinator: D. M. Henderson
Correspondence and Information: Educational Coordinator, Department of Geology, University of Illinois at Urbana-Champaign, 245 Natural History Building, 1301 West Green Street, Urbana, Illinois 61801

GRADUATE FACULTY

Professors: D. B. Blake, A. V. Carozzi, P. A. Domenico, D. L. Graf, D. M. Henderson, J. Hower, G. deV. Klein, R. L. Langenheim, C. J. Mann, P. A. Sandberg
Associate Professors: D. E. Anderson, T. F. Anderson, J. T. Holder, W. H. Johnson, R. J. Kirkpatrick, A. S. Nieto, V. V. Palciauskas
Assistant Professors: W. P. Chen, A. T. Hsui

Graduate Degree Programs. The Department of Geology offers programs leading to the Master of Science and Doctor of Philosophy in Geology and the Master of Science in the Teaching of Earth Science. Programs in carbonate geology; clay mineralogy; engineering geology and rock mechanics; geochemistry; geophysics; geomorphology and Quaternary geology; hydrogeology; marine geology; mathematical geology; mineralogy; igneous, metamorphic, and experimental petrology; paleontology; stratigraphy; sedimentology and sedimentary petrography; structural geology; and transport processes give students a wide choice of courses and areas of specialization.

Admission. The admission requirements of the Graduate College apply. In addition, the aptitude test and one advanced test (generally geology) of the Graduate Record Examination are required for admission to graduate work in geology. Geology majors having at least a year each of biology, calculus (preferably three semesters), chemistry, and physics are given preference, but students from cognate fields are encouraged to apply. For more information, write the Educational Coordinator.

Master of Science. The M.S. degree requires a minimum of 8 units of credit, of which 2 units are normally research credit for a satisfactory master's thesis. Students continuing on for the Ph.D. degree may petition to bypass the writing of a master's thesis and upon passing the preliminary examination, may petition to receive the M.S. degree. In exceptional circumstances, terminating students may petition to obtain the M.S. degree without completing a thesis. At least 3 units of course work must be taken within the department, and at least 3 units must be completed at the 400 level. A student must maintain the Graduate College minimum grade-point average of 3.75 (A = 5.0) during the master's program. In addition, each student must pass a written comprehensive examination. The program is normally completed in one to two years.

Master of Science in the Teaching of Earth Science. Candidates must earn 8 units, including 4 units in geology, 2 units in other earth science areas, and 2 units in education. At least 3 units must be at the 400 level. In addition, candidates must fulfill the requirements to be certified to teach at the secondary school level in Illinois. A student must maintain the Graduate College minimum grade-point average of 3.75 (A = 5.0) during the master's program. In addition, each student must pass a written comprehensive examination.

Doctor of Philosophy. The Ph.D. degree requires an additional 8 units of course work beyond the requirements for the master's degree and the completion of a satisfactory

thesis, including 8 units of research and seminar. At least 4 of the 8 additional units must be taken within the department and at least 3 of these units must be at the 400 level. At least 2 courses (totaling at least 1½ units) must be taken outside the geology department. A Ph.D. candidate must maintain a minimum grade-point average of 4.0 (A = 5.0) during all of his or her graduate work. A reading knowledge of German, Russian, or French is required. There are three faculty assessments of students' academic ability and progress: a written comprehensive, the preliminary, and the final examination. The written comprehensive examination surveys a student's background and preparation, and the results are used in planning individual programs. The preliminary examination is focused on a student's proposed research for the thesis and tests the student's preparedness for the proposed research. The final examination evaluates a student's research ability as demonstrated by the completed thesis. The doctoral program is normally completed in two to four years beyond the master's degree.

Financial Aid. Candidates for graduate degrees may be supported through teaching assistantships, research assistantships, fellowships, waivers of tuition and service fees, and work-study programs. Fellowships and assistantships include tuition and fee waivers. Awards for financial assistance are based principally on a candidate's academic record, statement of plans, and letters of reference. Some part-time assistants are employed by the State Geological Survey located on campus.

GERMANIC LANGUAGES AND LITERATURES

Head of the Department: Elmer H. Antonsen

Correspondence and Information: Head, Department of Germanic Languages and Literatures, University of Illinois at Urbana-Champaign, 3072 Foreign Languages Building, 707 South Mathews Avenue, Urbana, Illinois 61801

GRADUATE FACULTY

Professors: E. H. Antonsen, H. G. Haile, W. Höllerer, H. Knust, R. Lorbe, J. W. Marchand, P. M. Mitchell, I. Rauch

Associate Professors: M. Burkhard, U. H. Gerlach, M. Kalinke, J. M. McGlathery, K.-H. Schoeps

Graduate Degree Programs. The Department of Germanic Languages and Literatures offers graduate programs leading to the degrees of Master of Arts, Master of Arts in the Teaching of German, and Doctor of Philosophy.

Master of Arts. Applicants should have completed a four-year course of undergraduate study in German comparable to that of the University of Illinois at Urbana-Champaign, have a grade-point average of 4.0 (A = 5.0) for the last 60 hours of undergraduate course work plus any graduate work completed, be familiar with the principal works of German literature, and be able to follow lectures in the German language. Acquaintance with German history and culture in their relation to the general European background is desirable. Admission to the program is on a competitive basis.

Candidates for the Master of Arts in German may emphasize either literature or linguistics in their course of study, but all candidates must take course work in both areas.

Eight units of graduate work are required, although deficiencies in undergraduate preparation may necessitate more than 8 units to meet the requirements. Residence and other requirements of the Graduate College must be met. Candidates for the A.M. degree must demonstrate proficiency in reading one language other than English and German (normally French). Required courses (or approved equivalents) are: German 365 and 366 (Structure of the German Language I, II), German 311 and

312 (German Literature 750-1770), German 415 (Middle High German), German 420 (History of the German Language), German 410 (Introduction to Graduate Study), and two graduate literature courses on the 400 level. Electives may be chosen from within or from outside the department with the approval of the graduate adviser. The degree is awarded upon the successful completion of a three-hour written and a one-hour oral comprehensive examination, or upon successful defense of a thesis. More detailed information may be obtained from the departmental office.

Master of Arts in the Teaching of German. Applicants must meet the same admission standards as those for the Master of Arts in German. Candidates for the M.A.T. de-degree must earn 4 units in approved graduate courses in German, 2 units in approved courses in educational policy studies, and 2 units of electives. Candidates must also complete all undergraduate requirements for a teaching certificate, although no graduate credit is given for undergraduate courses. In some cases, with proper advance approval, graduate courses may be applied to the teaching certification requirements. Residence requirements are those of the Graduate College. The degree is awarded after the successful completion of a three-hour written and a one-hour oral examination. (Substantial revisions of these requirements are in the final stages of approval; detailed information is available from the departmental office.)

Doctor of Philosophy. Applicants must meet the admission standards outlined for the Master of Arts and, in addition, hold a Master of Arts in German (or equivalent) with a graduate grade-point average of 4.5 (A = 5.0) and a recommendation that the student pursue additional graduate study in the field.

Candidates for the Ph.D. in German may specialize in older German literature, modern German literature, or Germanic linguistics.

Students working toward the Ph.D. degree must have completed all requirements for the A.M. degree given above and complete an additional 8 units of course work approved by the graduate adviser. Residence requirements are those of the Graduate College. Candidates must demonstrate proficiency in reading two languages other than English and German, one of which is normally French. Students in Germanic linguistics may substitute Russian for French, with the second language Scandinavian. After passing the written preliminary examinations (three three-hour comprehensive examinations), the student is admitted to the oral examination, the successful completion of which admits the student to candidacy for the Ph.D. degree. The candidate must then complete 8 units of thesis research and successfully defend the thesis in an oral examination. All candidates for the Ph.D. degree must have taught the equivalent of three one-semester courses on the college level (i.e., teaching one-half-time for one academic year) before being admitted to the final oral examination (thesis defense). More detailed information is available from the departmental office.

Financial Aid. Financial aid of all types is contingent upon the maintenance of satisfactory progress toward a degree. Teaching assistantships are awarded on a competitive basis to promising candidates with a strong academic record. Preference may be shown for students who have lived in a German-speaking country and who have had some teaching experience.

Teaching assistantships are normally awarded one-half time for the academic year. Each year the department may nominate one or two outstanding students for a University Fellowship. A limited number of tuition and service fee waivers may also be available. Full details on amounts of financial aid and time limitations for eligibility may be obtained from the departmental office.

Research Interests. The department faculty includes nationally and internationally recognized authorities in all areas of research within the field, including older and modern German literature, medieval studies, Scandinavian literature, German film, computerized instruction, and historical and synchronic Germanic linguistics. The University Library has one of the nation's outstanding collections of works pertaining to study and research in German literature of all periods and of linguistics in general and Germanic linguistics in particular.

GOVERNMENT AND PUBLIC AFFAIRS

Director of the Institute: S. K. Gove
Correspondence and Information: Institute of Government and Public Affairs, University of Illinois at Urbana-Champaign, 1201 West Nevada Street, Urbana, Illinois 61801

GRADUATE FACULTY

Professors: J. F. Giertz, S. K. Gove
Associate Professor: P. F. Nardulli

The Institute of Government and Public Affairs conducts policy-oriented research and public service. The focus of the research is on important areas of state and local government structure and process with emphasis on the problems of urbanization. Public service activities arise from and contribute to the research thrust through contact with public officials and the identification of research problems. Each year the institute has several affiliate faculty members from related University of Illinois at Urbana-Champaign departments, as well as from other universities. The institute offers no courses, but its faculty members teach in various departments, guide student research, and direct intern programs. Results of institute research are published in internal and external journals and books.

HEALTH AND SAFETY EDUCATION

Head of the Department: Donald B. Stone
Correspondence and Information: Department of Health and Safety Education, University of Illinois at Urbana-Champaign, 121 Huff Gymnasium, 1206 South Fourth Street, Champaign, Illinois 61820

GRADUATE FACULTY

Professors: W. H. Creswell, Jr., R. G. Mortimer, L. B. O'Reilly, D. B. Stone
Associate Professors: P. B. Imrey, T. W. O'Rourke
Assistant Professors: M. R. Forouzesh, L. G. Rubinson, N. S. Slavik

Graduate Degree Programs. The Department of Health and Safety Education offers programs of study leading to the Master of Science and Doctor of Philosophy degrees. At the master's level, the program offers options in school health, safety, and community health education. The Ph.D. program is designed to prepare graduates for positions of leadership in teaching, research, and service in universities, industries, and private and government agencies in the United States and in other countries. Opportunities are available for graduate students who desire to concentrate in additional public health areas through an intercampus program with the School of Public Health, University of Illinois at Chicago.

Master of Science. Students without the equivalent of an undergraduate health education major may be permitted to register for graduate courses but will be required to make up deficiencies in their undergraduate preparation as deemed necessary by their advisers. The minimum standard for admission to the master's degree program is an undergraduate grade-point average of 4.0 (A = 5.0) or higher. The grade-point average is computed for the candidate's last 60 semester hours of undergraduate courses (excluding student teaching, field work, and activity courses).

The program of study for the Master of Science (school health option) is normally completed in one year of full-time study. Eight units of work are required, including the following: 6 units in health education, 1 unit of which may be in approved courses closely related to health education, and presentation of an acceptable thesis in health education (2 units). Candidates may petition to waive the thesis but will be

required to take 2 units in lieu of thesis credit. Students who elect to write a thesis must take an additional unit of course work in educational statistics if they did not complete a course of a similar nature in their undergraduate study.

The duration of study in the community health option is generally two years depending upon prior education and experience. Twelve units of work are required, including 4 units in the core courses which are intended to provide the student with an overall knowledge of the public health field and the tools necessary for successful functioning as a community health education specialist; 3 to 5 units of community health-related electives, 2 units of field work experience in the summer, and presentation of an acceptable thesis or research project (1 to 3 units).

The program of study in the safety option requires a minimum of 8 units. Two units are fulfilled by satisfactory completion of a thesis which is required for the degree. In addition, students who have not had at least one undergraduate course in statistics will be required to take an additional unit of course work in educational statistics. Three and three-fourths units of work are required in occupational health and safety related courses. The remaining courses may be elected to emphasize the student's major area of interest in occupational health and safety.

Doctor of Philosophy. The admission requirements of the Ph.D. program include the following: an acceptable grade-point average in undergraduate work and an average of 4.5 for graduate work, an acceptable score on the Miller Analogies Test and on the aptitude section of the Graduate Record Examination, and three letters of recommendation. Candidates are required to have a personal interview with the department head or other representatives of the department. Preference is given to students who have had at least two years of professional experience.

A master's thesis or equivalent is required for applicants for Ph.D. study. Candidates for the Ph.D. degree must complete a minimum of 25 units of credit including the following: a minimum of 9 units in the major or related fields; one minor for a minimum of 4 units, or two minors for a minimum of 2 units each (in both cases outside the major and related fields); ability to translate accurately two foreign languages or ability to read, write, and converse satisfactorily in one foreign language (2 additional approved graduate course units may be substituted for each of the two foreign languages); a seminar in the major field; and completion of an acceptable thesis (8 units). All candidates must take 2 units of graduate course work to fulfill the research requirements: Educational Psychology 390 and 496 or their equivalents.

The candidate is required to pass written preliminary examinations covering human ecology and epidemiology, school-college health education, community health education, occupational health and safety, research, and a selected area of specialization; to present an oral defense of the thesis proposal; and to pass an oral final examination covering the thesis research.

Financial Aid. Financial aid is available on a competitive basis to qualified students in the form of teaching and research assistantships and tuition and service fee waivers.

HISTORY

Chairperson of the Department: Richard W. Burkhardt
Director of Graduate Studies: Donald D. Queller
Correspondence and Information: Department of History, University of Illinois at Urbana-Champaign, 309 Gregory Hall, 810 South Wright Street, Urbana, Illinois 61801

GRADUATE FACULTY

Professors: W. L. Arnstein, J. L. Bates, P. P. Bernard, R. B. Crawford, C. E. Dawn, L. E. Eastman, W. D. Farnham, R. T. Fisher, Jr., B. D. Hill, K. A. Hitchins, F. C. Jaher, R. W. Johannsen, B. B. Kling, J. L. Love, R. M. McColley, J. P. McKay, J. A. Nichols, D. E. Queller, D. L. Ransel, P. W. Schroeder, W. U. Solberg, C. C. Spence, R. M. Sutton

Associate Professors: J. Buckler, R. W. Burkhardt, P. W. Drake, C. M. Hibbard, R. C. Jennings, T. A. Krueger, R. E. Mitchell, J. H. Pruett, M. L. Spence, C. C. Stewart, B. P. Uroff, H. J. Wechsler, W. Widenor

Graduate Degree Programs. The Department of History offers graduate courses leading to the Master of Arts and the Doctor of Philosophy, complete details of which may be found in the department's brochure on graduate study in history. The Master of Arts degree may be either the first stage in preparation for the degree of Doctor of Philosophy or a terminal degree. A special program for teacher training is available, the Master of Arts in the Teaching of Social Studies (see page 157).

Approved areas of specialization are: ancient Greece; ancient Rome; medieval; Renaissance and Reformation; Europe and dependencies, 1648-1815; Europe and dependencies since 1815; Russia; Eastern or Southeastern Europe; England to 1688; England and the Empire-Commonwealth since 1688; Near East and Middle East; Africa; China; Japan; South Asia; early America to 1830; United States since 1815; Latin America; history of science; history of international relations since 1871; Afro-American history; native American history; history of medicine; and history of women. Topical fields may also be arranged with the consent of the graduate advisers.

Admission. For the A.M. program: an average of 4.0 (A = 5.0) during the last two years of undergraduate work, a reasonable amount of course work in history, and Graduate Record Examination scores (verbal and quantitative mandatory; history optional). For the Ph.D. program: an average of 4.5 (A = 5.0) for previous graduate-level work and Graduate Record Examination scores (as above). Undergraduate language preparation may be weighted heavily depending upon field of specialization.

Master of Arts. Candidates are expected to take at least 2 units in each of two of the fields of specialization listed above. A minimum of 8 units is required, 5 of which must be at the 400 level (excluding History 499). One of the 8 units must be History 490 (history and social theory), 491 (quantitative history), or 496 (historiography). At least one research seminar with a grade of B or better must be included. Students may elect to write a master's thesis, but the thesis does not replace the seminar requirement and may carry no more than 2 units of credit. A candidate must demonstrate ability to read one foreign language related to his or her field of interest as approved by the graduate advisers.

Doctor of Philosophy. A candidate for the Ph.D. needs a minimum of 24 units (including those offered for the A.M. degree), of which 8 may be for thesis research (499). Seven 400-level courses (not including History 490, 491, 498, or 499) are required, including History 496 and three research seminars. In addition, either History 490 (history and social theory) or 491 (quantitative history) is required. A candidate must demonstrate ability to read two foreign languages related to his or her field of interest, as approved by the graduate advisers. In certain circumstances, a student in American or British history may substitute courses in quantification skills for the second language. For the preliminary examination, the candidate will customarily offer four fields in history, of which one must involve a period of time prior to 1815. At least two geographical areas must also be represented by the fields offered for the examination. One of the four fields, however, may be in a specialization outside the Department of History or may be a field of history specially designed by the candidate in consultation with the major adviser (e.g., U.S. intellectual or European economic history). Four units in disciplines other than history may be applied to fulfill the minimum requirement of 24 units.

Concentration in the Area of American Civilization. The Department of History administers an interdisciplinary doctoral program in American civilization. Students are required to take, among their 16 units prior to preliminary examinations, at least 4 units in American history, 3 in literary studies, 2 in the fine arts, and 2 in the social sciences. Course work may be arranged to allow specialization in such interdisciplinary fields as popular culture, urban studies, regional studies, folklore, film, and minority cultures. Students may earn a master's degree in American civilization by

taking 8 units, including 3 in history, 2 in literature, and 2 in either the fine arts or the social sciences. At least 4 of these units must be at the 400 level, and one should represent an interdisciplinary research project. Students apply for admission and financial aid through the Department of History.

Concentration in the Area of History and Philosophy of Science. The Departments of History and Philosophy jointly offer, for work toward the A.M. and the Ph.D. degrees, a special area of concentration in history and philosophy of science. Students interested in this program will enroll in and receive their degrees from either the history or the philosophy department depending on the focus of their interests. Undergraduate background requirements for admission to the program are flexible; although an undergraduate concentration in either history or philosophy is normally desirable, so also is a strong background in science, and students with such backgrounds, but only weak training in history or philosophy, will be considered for admission. The admission procedure is the same as that stated for each of the two departments, as is the information to be submitted with each application for admission. For students in this special concentration, the normal departmental requirements for the A.M. and Ph.D. degrees are modified. Further information is available from the Department of History.

Financial Aid. Financial aid is almost always awarded on an academic-year basis. Applications are due in the department office by February 15. All fellowships and assistantships involve a stipend plus tuition and service fee waiver.

Fellowships. Available fellowships include University Fellowships for entering A.M.-level students and for Ph.D.-level students at the dissertation writing stage, Babcock Fellowships for dissertation-level students, Foreign Language and Area Studies (NDEA VI). Fellowships for those who have special interests in foreign area studies, and Graduate College Fellowships for beginning students who have disadvantaged backgrounds.

Teaching Assistantships. Half-time teaching assistantships are the department's primary form of financial aid to graduate students admitted to the Ph.D. program. Students who make satisfactory progress toward their degree and demonstrate effective teaching will have their teaching assistantships renewed for a second and, in some cases, a third year.

Tuition and Service Fee Waivers. A number of tuition and service fee waivers are available each year both to entering and continuing students at the A.M. and Ph.D. levels.

HISTORY AND PHILOSOPHY OF SCIENCE

Graduate Degree Program. An interdisciplinary concentration in the history and philosophy of science is available leading to the Master of Arts or Doctor of Philosophy degree. Students for this program enroll in either the Department of History or the Department of Philosophy. Further information may be obtained from those departments or the School of Humanities.

HORTICULTURE

Head of the Department: W. L. George

Correspondence and Information: Department of Horticulture, University of Illinois at Urbana-Champaign, 124 Mumford Hall, 1301 West Gregory Drive, Urbana, Illinois 61801

GRADUATE FACULTY

Professors: D. F. Dayton, D. B. Dickinson, W. L. George, H. J. Hopen, C. A. Rebeiz, A. M. Rhodes, R. K. Simons, W. E. Splittstoesser, J. S. Titus

Associate Professors: M. M. Meyer, R. M. Skirvin, L. A. Spomer
Assistant Professors: B. A. Eisenberg, T. W. Fermanian, J. M. Gerber, G. J. Kling, D. L. Sanford, J. M. Swiader, D. J. Wehner, D. J. Williams

Graduate Degree Programs. Graduate work is offered in the Department of Horticulture leading to the Master of Science and Doctor of Philosophy degrees. Students may specialize in any phase of horticulture (fruit and vegetable crops, ornamentals, and turf), including breeding and genetics, culture and production, weeds and their control, environmental physiology, biochemistry, developmental anatomy and morphology, tissue culture, or marketing. A well-balanced program may include courses in agronomy (crops and soils), botany, food science, genetics, statistics, entomology, plant pathology, chemistry, biochemistry, agricultural economics, and agricultural communications.

Admission. Applicants should have a bachelor's degree in horticulture or equivalent preparation in the plant sciences and must meet the Graduate College requirements for admission.

Master of Science. A candidate must complete a minimum of 8 units of graduate study with a grade-point average of at least 4.0 (A = 5.0); at least 3 units must be in the 400 series of courses. Thesis and nonthesis options are available; however, the thesis option is preferred and is required of all research assistants. Any request for the nonthesis option is considered on its individual merit by the graduate committee of the department.

Doctor of Philosophy. The candidate must complete a minimum of 8 units of course work beyond the master's degree and pass a preliminary examination. The candidate must also complete 8 units of thesis research, submit an acceptable thesis, and defend it in an oral examination. Competence in a foreign language may be required, depending on the area of specialization and recommendations of the student's advisory committee. Additional details of departmental graduate degree requirements are described in a pamphlet available from the Department of Horticulture.

Financial Aid. Various support monies available on a competitive basis include University Fellowships, College of Agriculture fellowships, research and teaching assistantships, and waivers of tuition and service fees.

HUMANITIES

Director of the School: Nina Baym
Correspondence and Information: School of Humanities, University of Illinois at Urbana-Champaign, 112 English Building, 608 South Wright Street, Urbana, Illinois 61801

The School of Humanities, one of four schools in the College of Liberal Arts and Sciences, is the association of thirteen departments and programs in the humanities; it also maintains cooperative relationships with allied departments in other colleges. The school includes the Departments of the Classics; English; French; Germanic Languages and Literatures; History; Linguistics; Philosophy; Slavic Languages and Literatures; Spanish, Italian, and Portuguese; and Speech Communication; the Programs in Comparative Literature and Religious Studies; and the Division of English as a Second Language. The master's and doctoral degree programs offered in the graduate units in the School of Humanities are described in individual entries in this catalog for each field of study.

The various departments and programs include almost 280 faculty and approximately 400 graduate teaching and research assistants. The School of Humanities' primary responsibility is to promote humanistic teaching, research, and public service both in the traditional disciplines and in interdisciplinary fields. In addition to tradi-

tional fields of study, the school also offers various special and interdisciplinary subjects including cinema studies, American civilization, medieval civilization, and Renaissance studies. A graduate certification program is offered in criticism and interpretive theory, and master's and doctoral programs are available in American civilization and the history and philosophy of science. These programs and the work of individual degree candidates are supervised by interdisciplinary advisory committees.

HUMAN RESOURCES AND FAMILY STUDIES

Director of the School: MARILYN M. DUNSING

Correspondence and Information: School of Human Resources and Family Studies, University of Illinois at Urbana-Champaign, 274 Bevier Hall, 905 South Goodwin Avenue, Urbana, Illinois 61801

GRADUATE FACULTY

Professors: M. M. DUNSING, L. R. HACKLER, F. M. MAGRABI, L. B. O'REILLY, R. B. SMITH

Associate Professors: K. A. ANSPACH, L. L. BIRCH, R. D. CONGER, J. L. HAFSTROM, B. P. KLEIN, B. J. PETERSON, M. F. PICCIANO, R. J. REBER, S. B. SALAMON

Assistant Professors: S. D. ASHBROOK, A. H. BELLER, P. L. BRADY, H. M. BUCKLEY, J. S. DELOACHE, M. A. KHAN, D. K. LAYMAN, E. D. LOWE, S. S. MOHAMED, K. K. PARKAY, M. RAHEEL, K. D. RETTIG, C. P. RIES, A. R. SHERMAN, M. P. SHERMAN

Graduate Degree Programs. The School of Human Resources and Family Studies offers graduate work leading to the Master of Science, Master of Arts, and Doctor of Philosophy degrees. Master's degree programs are available in family and consumption economics, foods and nutrition, general human resources and family studies, human development and family ecology, and textiles and clothing. Doctoral degrees are offered in family and consumption economics and in foods and nutrition. Requirements for these are listed under the individual programs.

For the master's degree in human resources and family studies, all candidates must complete a minimum of 8 units (9 if a thesis is not submitted) of which at least 4 must be in human resources and family studies subject-matter courses. Four of the total units, including at least 2 in human resources and family studies subject-matter, must be in 400-level courses.

The minimum grade-point average for admission is 4.0 (A = 5.0). Additional requirements are listed under the individual programs.

INDIVIDUAL DEGREE PROGRAMS

Family and Consumption Economics. The family and consumption economics programs are interdisciplinary. Admission requirements include one semester of principles of economics plus a course in applied statistics. Major areas of faculty research include satisfaction related to levels and standards of living and quality of living for families and individuals, and human capital with emphasis on education and employment of women.

Master of Science. The M.S. program requires 2 units from Family and Consumption Economics 313 and 370, 2 units of thesis from Family and Consumption Economics 499, and 2 units of economic theory, Economics 400-401 or 402-403.

Doctor of Philosophy. Requirements include: (1) 4 units from Family and Consumption Economics 313, 370, 470, and 493; 2 units from economic theory; 2 units at the 400 level from economics or agricultural economics; a graduate-level applied statistics course; two graduate-level courses in sociology and/or psychology, or one course in these areas and Human Development and Family Ecology 410; 8 units of thesis, Family and Consumption Economics 499. (2) Two of the three stages must be in residence. (3) Four written examinations, one in family economics, one in consumption economics, one in economic theory, and one in the candidate's second minor.

Foods and Nutrition. Major areas of faculty research interest include: infant nutrition; mineral, protein, and amino acid metabolism; nutrition and immunity; nutrient retention in foods; sensory evaluation and food quality; role of dietary fiber in nutrition; nutrition education; biochemistry of food enzymes; and use of soybeans and soy products in human food.

Master of Science. For admission, candidates must have had an undergraduate foods course with an organic chemistry prerequisite, a nutrition course with organic chemistry and physiology prerequisites, adequate training in chemistry including quantitative analysis and organic, and introductory courses in college algebra and microbiology. In addition, introductory courses in accountancy, business administration, and economics are necessary for admission into the food service systems program. Deficiencies may be made up during the first year of graduate study. In the graduate study program, foods, nutrition, or food service systems may be emphasized or a balanced program planned. A minimum of 8 units, of which at least 4 must be in foods and nutrition, must be completed. Four of the total units, including at least 2 in foods and nutrition, must be in 400-level courses. Foods and Nutrition 324, 330, 422, 432, and 493 or 499, Biochemistry 350 or 352, 353, and 355, and a course in statistics are required for foods and/or nutrition emphasis. For food service systems emphasis, Foods and Nutrition 330, 345, 359, 432, and 445, and Business Administration 411, 415, or 420 are required. Additional courses may be taken in foods and nutrition or in related departments.

Doctor of Philosophy. For admission, in addition to the prerequisites listed above for a master's degree, a candidate must have taken courses in calculus and physics. Deficiencies may be made up during the first year of graduate study. If a candidate has a master's degree in foods and nutrition or a related area, a minimum of 8 units of course work and 8 units of thesis research are required. Required courses include at least 3 units of foods and nutrition, of which 2 are at the 400 level; advanced courses in biochemical theory and methods; a course in statistics; and an advanced course in food microbiology or mammalian physiology. Additional courses in the above areas or in animal nutrition, food science, nutritional sciences, or life sciences are selected to satisfy course requirements. Thesis research can be done in foods or in nutrition. If the candidate does not have a master's degree in foods and nutrition or related areas, 16 units of course work are required in addition to 8 units of thesis research.

General Human Resources and Family Studies. The master's program in general human resources and family studies allows the candidate to obtain greater breadth than is possible in one of the more specialized areas. Candidates are required to take a minimum of 4 units from prescribed courses in three of the five specialized fields in human resources and family studies.

Home Economics Education. The M.S. program in home economics education requires that candidates hold a valid teaching certificate for home economics or have successfully completed Illinois certification requirements, and earn at least 8 units of graduate credit, of which 4 units are in human resources and family studies. Three of the 8 units must be at the 400 level, with at least 1 of these in human resources and family studies. Four ½-unit courses are specified in educational psychology and educational policy studies. At least 2 units must be in home economics education. Advisers for students in this program are in the Division of Home Economics Education.

Human Development and Family Ecology. For the M.S. or A.M. degree in human development and family ecology, the student may specialize in study of either the family or some stage of the life span. Upon completion of the master's degree, qualified students may request transfer to a department which offers the Ph.D. degree in a closely related field. Major areas of research include child, adolescent, and adult development; family interaction/ecology; developmental family biology; gerontology; cognitive development; family problems; abnormal development; social competency; child advocacy/parent education; and service programs/administration. Minimum admission requirements include previous course work in an area of the behavioral/social sciences. Admission to the master's degree program is based on a combination of cri-

teria. Applicants should have some background in the behavioral, physical, and/or biological sciences. Course work in statistics or research methods is given special attention in considering candidates. For the degree, candidates must complete a minimum of 8 units, including 2 units of thesis, or 9 units if a thesis is not submitted. Four of the total units, including at least 2 in human development and family ecology, must be in 400-level courses.

Textiles and Clothing. For the M.S. or A.M. degree in textiles and clothing, the student may specialize in the study of apparel design/history, social-psychological and cultural aspects of dress and human behavior, and textile science. Major areas of research include physical testing of textiles and textile products; textile finishing; energy consumption in the production, use, and care of apparel textiles and home furnishings; social-scientific and cultural analysis of human behavior related to apparel; and design aspects in dress, textiles, and interiors.

Master of Science or Master of Arts. Admission requirements include a basic course in each of the following areas: clothing, textiles, art, chemistry (including organic), economics, sociology, and psychology. Deficiencies may be made up during the first year of graduate study. The graduate program must include 4 units chosen from Textiles and Clothing 380, 386, 480, 487, 493, and 499. A graduate-level statistics course also is required. Additional courses are selected in accordance with the special interests of the student.

Financial Aid. University Fellowships and fellowships in the College of Agriculture, tuition and service fee waivers, research assistantships, and teaching assistantships are available in several programs.

JOURNALISM

Head of the Department: Thomas B. Littlewood
Correspondence and Information: Department of Journalism, University of Illinois at Urbana-Champaign, 119 Gregory Hall, 810 South Wright Street, Urbana, Illinois 61801

GRADUATE FACULTY

Professors: J. Carey, T. Guback, J. Jensen, T. Littlewood, T. Peterson
Associate Professors: C. Christians, R. Reid
Assistant Professors: E. Wartella, J. Whelan, C. Whitney

Graduate Degree Program. The Department of Journalism offers graduate work leading to the Master of Science degree. The department does not offer a Ph.D. degree. For the program leading to the Doctor of Philosophy in Communications, see page 84.

Admission. Applicants must possess a bachelor's degree from an accredited U.S. institution or one of recognized standing abroad. A grade-point average of 4.0 (A = 5.0) is the minimum requirement for admission to the Graduate College, with exceptions by petition only. Because the master's program has an enrollment ceiling, some applicants with grade-point averages of 4.0 or higher may not be admitted. It is imperative that all applicants supply writing samples. Letters of recommendation, Graduate Record Examination or other test scores, and, if possible, a personal interview with the head of the department or director of graduate studies are also helpful.

Master of Science. The following are requirements for the degree: (1) A major of 4 units, or 3 units and 1 additional unit approved by the department. Candidates without undergraduate work in journalism or equivalent professional experience are required to complete 1 unit of news editing (either news-editorial or broadcast news editing), 2 units in news writing, and 1 unit of either graphics and photojournalism,

television, or radio news production. (2) A thesis, or preparation of a topic in journalistic form for publication or broadcast, for 1 unit. (3) A minimum of 3 units in courses at the 400 level, at least 2 of which must be in journalism. (4) A minimum total of 8 units with a grade-point average not lower than 3.875.

Financial Aid. See the description of the University Fellowship and tuition and service fee waiver program in the introductory section of this catalog. Assistantships (teaching or research) are awarded on a one-quarter–time to two-thirds–time basis at a salary of not less than $2,300 to $6,132 for the academic year. Assistantships carry a waiver of tuition and fees (except the health service and insurance fees). To be considered for financial aid, applications, including transcripts and three letters of recommendation, must be received no later than February 15. Students with journalism degrees or professional experience may become candidates for part-time positions in other units of the University that require journalistic skills in writing, editing, and/or photography and graphics.

LABOR AND INDUSTRIAL RELATIONS

Director of the Institute: W. Franke

Correspondence and Information: Assistant to the Director, Institute of Labor and Industrial Relations, University of Illinois at Urbana-Champaign, 504 East Armory Avenue, Champaign, Illinois 61820

GRADUATE FACULTY

Professors: M. Derber, W. Form, W. Franke, P. Hartman, C. Hulin, B. Karsh, G. Oldham, M. Rothbaum, K. Taira, H. Triandis, M. Wagner

Associate Professors: F. K. Blau, P. Feuille, W. Hendricks, L. Kahn

Graduate Degree Programs. The Institute of Labor and Industrial Relations offers graduate work leading to the Master of Arts and Doctor of Philosophy degrees. Students must meet the general admission requirements of the Graduate College as well as the specific requirements of the institute.

Graduate study at the institute is based on a multidisciplinary approach to industrial relations problems and a flexible curriculum. To achieve this the institute has joint faculty appointments and course listings with economics, psychology, sociology, and business administration; and joint course listings with law, political science, vocational education, and social work.

Master of Arts. The master's program can lead to a professional, terminal A.M. degree, or it can prepare students to continue their graduate study toward a Ph.D. degree or doctoral degrees in law and other professional areas. The fields of concentration are: unions, management, and labor relations policy; organizational behavior and personnel management; and human resources utilization and development.

The institute offers two program options for the A.M. degree, one requiring 8 units of work, including a thesis, and the other requiring 10 units of work, including a tutorial. The thesis option is more specialized and research oriented. Either option normally takes three semesters to complete. Students need not make their choice until they have completed one semester. All master's candidates must take Labor and Industrial Relations 491, Industrial Relations Systems; 492, Research Methods; 493, Quantitative Methods; and a final comprehensive oral examination.

Admission to the master's program is based on an applicant's undergraduate record, letters of reference, Graduate Record Examination scores, and statement of interest and goals. Normally, the minimum requirements for admission are a course in statistics and an average grade of B in the last 60 hours of undergraduate work. A deficiency in statistics may be made up by taking the required course without graduate credit during the first semester of graduate study. Institute courses often

have social science prerequisites which are usually met through appropriate undergraduate courses. If a student lacks these prerequisites, an instructor may require additional preparation or course work before admitting the student to the course.

Joint J.D./A.M. The joint degree program with the College of Law leads to the J.D. and the A.M. degrees in labor and industrial relations in three-and-one-half years. Students must apply to both the College of Law and the Institute of Labor and Industrial Relations, and must be accepted by both units.

Doctor of Philosophy. The Ph.D. program in labor and industrial relations is an interdisciplinary research degree. An individual program is built around the student's area of specialization. It includes industrial relations theory, research methodology, and a set of courses in both a major and a second discipline, and other social sciences which are relevant to the area of specialization and the thesis problem. Examples of areas of specialization include: government employer-employee relationships; labor in politics; economic effects of collective bargaining; discrimination in employment; wage policy issues in economic development; motivation, morale and job satisfaction; and international comparative industrial relations systems. The Ph.D. degree requires 24 units of credit beyond the baccalaureate degree, satisfactory completion of qualifying examinations in industrial relations theory and the area of specialization, and a thesis.

A student interested in earning a Ph.D. degree after receiving a master's degree at the institute should indicate this fact on application for admission. A student with a master's degree from another institution may apply for entrance directly into the doctoral program. The master's degree should be in labor and industrial relations or an allied field such as business administration, economics, history, sociology, political science, or psychology. The applicant should submit with the application evidence of research competence (master's thesis, term papers, an undergraduate thesis, special reports, or published articles). All papers will be returned.

Financial Aid. The institute offers research assistantships to high-ranking graduate students and to new students whose undergraduate records are superior. Assistantships pay a salary plus exemption from tuition and service fees. The Graduate College awards fellowships which carry stipends plus tuition and service fee waivers. Tuition and service fee waivers may also be granted but do not carry a stipend.

LANDSCAPE ARCHITECTURE

Head of the Department: Robert B. Riley
Coordinator of the Graduate Program: E. S. Weidemann
Correspondence and Information: Coordinator of the Graduate Program, Department of Landscape Architecture, University of Illinois at Urbana-Champaign, 214 Mumford Hall, 1301 West Gregory Drive, Urbana, Illinois 61801

GRADUATE FACULTY

Professors: T. G. Harkness, W. M. Keith, R. B. Riley, D. L. Slotnick
Associate Professors: L. D. Hopkins, E. S. Weidemann
Assistant Professors: M. D. Cairns, C. L. Kluesing, J. I. Nassauer

Graduate Degree Program. The Department of Landscape Architecture offers work leading to the Master of Landscape Architecture. The program is designed to enable students to gain fresh insights and to experiment with new applications pertaining to land and its use by people. Courses and faculty research activities are concentrated in two major areas: land resources planning and design-behavior interaction. Before submitting an application, students should obtain a pamphlet from the department which describes the specific areas of study and the time needed to complete the requirements.

Admission. The Graduate College admission requirements apply. Students are admitted on an individual basis according to a review of their prior accomplishments with an emphasis on academic achievement. Candidates from undergraduate design programs must submit samples of their design work with their applications. Candidates without undergraduate preparation in landscape architecture will be admitted on limited status and must complete undergraduate prerequisite courses in addition to graduate work.

Master of Landscape Architecture. A student must complete a minimum of 12 units with at least 6 units taken within the department and at least 3 units of electives chosen from courses offered outside the department. At least 4½ units must be taken in 400-level courses. Specific courses to be taken are determined in consultation with an adviser. These courses must culminate in either a master's project (Landscape Architecture 498) or a master's thesis (Landscape Architecture 499), that permits the student to pursue in depth and independently a project of particular interest, to synthesize knowledge and skills from previous course work, and to demonstrate competence to do work of professional caliber.

Financial Aid. Students compete for fellowships, tuition and service fee waivers, and assistantships.

LATIN AMERICAN AND CARIBBEAN STUDIES

Director of the Center: Paul W. Drake

Correspondence and Information: Center for Latin American and Caribbean Studies, University of Illinois at Urbana-Champaign, 1208 West California Avenue, Urbana, Illinois 61801

GRADUATE FACULTY

Professors: W. Baer, W. Blaylock, J. Casagrande, C. Deal, F. Dovring, F. Fliegel, R. Findley, W. Form, D. Grove, J. Hill, J. Karr, D. Lathrap, J. Love, A. Pasquariello, R. Reisner, M. Saltarelli, S. Schmidt, R. Scott, J. Thompson, R. Troike, J. vanEs, N. Whitten, R. Zuidema

Associate Professors: A. Aiex, A. Carreño, D. Coes, P. Cole, P. Drake, T. Meehan, M. Solaun, J. Stewart

Assistant Professors: P. Borgeson, S. Brown, S. Bunker, P. Garber, M. Lewis

Graduate Degree Programs. Graduate minors in Latin American and Caribbean studies are administered by the director of the Center for Latin American and Caribbean Studies.

Candidates for the master's degree who elect a minor in Latin American and Caribbean studies must complete 2 units from the courses prescribed by the center. Doctoral candidates who elect a minor in this area must complete 4 units for a sole minor or 2 units for a split minor. Courses must be taken in at least two departments; lists of courses fulfilling the minor are available from the center.

Students in technical and professional colleges and schools of the University of Illinois at Urbana-Champaign who seek knowledge of Latin American and Caribbean affairs, culture, and languages are invited to consult with the director of the center or with their advisers in order to develop programs suited to their individual needs. Such a program may often be adopted as a special minor under existing regulations if the student so desires. These courses are of particular value to students who intend to carry on technical or professional work in the Latin American and Caribbean area for government, private business, publishing, or religious organizations.

LAW

Dean of the College: PETER HAY
Director of Graduate and International Legal Studies: R. REISNER
Correspondence and Information: College of Law, University of Illinois at Urbana-Champaign, 209 Law Building, 504 East Pennsylvania Avenue, Champaign, Illinois 61820

GRADUATE FACULTY

Professors: J. E. CRIBBET, M. L. FELLOWS, R. W. FINDLEY, G. T. FRAMPTON, M. H. GRAHAM, P. H. HAY, H. D. KRAUSE, W. R. LAFAVE, J. M. LANDERS, P. B. MAGGS, P. MARCUS, J. H. MCCORD, J. E. NOWAK, W. PAINTER, R. REISNER, R. D. ROTUNDA, E. W. SHOBEN, R. SIMON, V. J. STONE
Associate Professor: R. L. MARCUS
Assistant Professors: F. A. BOYLE, I. A. BREITOWITZ, M. HOEFLICH, R. L. KAPLAN, J. E. MUENCH, R. A. SMOLLA

Graduate Degree Programs. The College of Law offers a program of graduate work leading to the Master of Laws, Master of Comparative Law, and Doctor of the Science of Law.

Master of Comparative Law. A student whose undergraduate study in law has been in systems based on the Anglo-American common law is eligible to apply for candidacy for the Master of Laws or Doctor of the Science of Law. An international lawyer whose prior law study has been in a system which is not based on the Anglo-American common law may, in exceptional cases, be admitted to candidacy for Master of Laws or Doctor of the Science of Law, or such an international lawyer may apply for candidacy for the Master of Comparative Law. The Master of Comparative Law program is designed to develop facility in the comparative method and to prepare an international lawyer to deal knowledgeably with Anglo-American problems. Admission standards, as well as residency, grade-point average, and other requirements, except for a thesis, are substantially the same as for the Master of Laws and Doctor of the Science of Law programs.

Master of Laws and Doctor of the Science of Law. For admission, an applicant must have received a first degree in law from a law school which has graduation requirements substantially the same as the University of Illinois College of Law and must present evidence of ability to do satisfactory work at the graduate level. A candidate for the Master of Laws (LL.M.) must have a grade-point average of at least 4.0 (A = 5.0) in all law work previously undertaken.

Admission to candidacy for the Doctor of the Science of Law (J.S.D.) degree is granted only after the completion of two terms in residence. The decision to admit will be based on the applicant's outstanding performance in the courses taken as well as upon a demonstrated ability to produce a thesis of publishable quality.

One academic year in residence is required of a candidate for an advanced degree. The programs for the LL.M. and J.S.D. degrees consist of course work and research which have been approved by the committee on graduate study of the College of Law, comprising at least 8 units of graduate work, of which at least 2 for the master's degree and 4 for the doctoral degree must be in research. In addition to the course work and research, a thesis is required. For the master's degree, the thesis may be completed during the year in residence. For the doctoral degree, the thesis must be submitted not less than one year nor more than five years after the completion of the residence requirement, and the candidate must pass an oral examination before a committee of the faculty. The program for the Master of Comparative Law consists entirely of course work and must include satisfactory completion of Law 402, Introduction to U.S. Law. The candidate for the Master of Laws or the Master of Comparative Law degrees must maintain a grade-point average of 3.5 in graduate or professional law courses; the candidate for the Doctor of Science of Law, an average of 4.0.

Financial Aid. The College of Law offers seven instructorships to students whose backgrounds have been in the Anglo-American common law system and four research assistantships for students with backgrounds in other legal systems. In addition, a limited number of fellowships and waivers of tuition and service fees are available. All types of financial aid enable students to complete the degree requirements within the regular time limits. Because of the keen competition for the few available financial grants, application for these should be made as early as possible, preferably by January 1.

LEISURE STUDIES

Head of the Department: Joseph J. Bannon

Correspondence and Information: Head, Department of Leisure Studies, University of Illinois at Urbana-Champaign, 104 Huff Gymnasium, 1200 South Fourth Street, Champaign, Illinois 61820

GRADUATE FACULTY

Professors: J. J. Bannon, R. J. Burdge, A. V. Sapora

Associate Professors: R. D. Espeseth, J. R. Kelly, D. A. Kleiber, C. A. Peterson, G. C. Roberts

Assistant Professors: J. D. Absher, D. J. Brademas, G. A. Lowrey, Jr., L. B. Morris

Graduate Degree Programs. The Department of Leisure Studies offers a program of study leading to the Master of Science and the Doctor of Philosophy degrees. The Master of Science program prepares supervisors and administrators for public parks and recreation systems, treatment centers for the ill and handicapped, and various private and semipublic settings providing leisure services, or the M.S. degree may serve as the first step toward the Ph.D. program. The Ph.D. program is, in general, designed to train teacher-scholars and research personnel in the study of leisure behavior, the management of leisure service delivery systems, or both.

Admission. The Graduate College admission requirements apply. The departmental graduate committee considers the candidates' maturity, experience, and commitment to the field in making admissions decisions. Specifically, the admission requirements are as follows: minimum grade-point average of 4.0 (A = 5.0) for the last 60 hours of undergraduate work and any graduate work completed, satisfactory verbal and quantitative Graduate Record Examination scores, 15 semester hours of behavioral science, 8 semester hours of natural science, and an acceptable introductory statistics course. The previous degree field is of importance, and preference is given to those with a solid array of undergraduate courses in recreation or, for Ph.D. applicants, a master's degree in the field. Preference is also given to applicants who will be full-time students and active degree candidates.

Master of Science. A candidate for the M.S. degree must spend at least one semester on campus and complete a minimum of 8 units, 3 of which must be in the 400 series, and 2 of the 3 must be in leisure studies. Four of these units should be in the student's area of specialization. A thesis may be written for 2 units of credit. A full-time student can complete the program in three or four semesters.

Doctor of Philosophy. A candidate for the Ph.D. degree must spend at least two years in residence and satisfactorily complete a minimum of 16 units beyond the master's degree. These units include the credit for the Ph.D. thesis. Two foreign languages are required, but this requirement may be waived provided 2 additional units of course work are substituted for each language. Graduate examinations include written preliminary examinations taken at the completion of formal course work, oral preliminary examinations on the proposed research of the thesis, and a final examination in defense of the doctoral thesis.

Financial Aid. The department offers one-quarter–time and one-half–time assistantships in both teaching and research. If possible, students should indicate a desire for this type of part-time employment when applying for admission.

LIBRARY AND INFORMATION SCIENCE

Dean of the Graduate School of Library and Information Science: CHARLES H. DAVIS
Correspondence and Information: Graduate School of Library and Information Science, University of Illinois at Urbana-Champaign, 410 David Kinley Hall, 1407 West Gregory Drive, Urbana, Illinois 61801

GRADUATE FACULTY

Professors: C. H. DAVIS, H. GOLDHOR, D. W. KRUMMEL, F. W. LANCASTER, M. WILLIAMS
Associate Professors: W. C. ALLEN, J. L. DIVILBISS, K. L. HENDERSON, S. RICHARDSON, C. E. THOMASSEN, T. L. WEECH
Assistant Professors: L. AULD, K. HEIM, J. K. MILLER, L. SMITH

Graduate Degree Programs. The Graduate School of Library and Information Science offers programs of study leading to the Master of Science, the Certificate of Advanced Study, and the Doctor of Philosophy degrees. The Master of Science degree program prepares men and women for professional careers in all types of libraries and information centers. The Certificate of Advanced Study program provides opportunity (a) to study an aspect of library and information science in greater depth than is possible in the Master of Science program, (b) to refresh and upgrade one's professional training several years after the Master of Science program, or (c) to redirect one's career into a different area of library and information science. The Doctor of Philosophy is a research degree program.

Admission. In addition to the general admission requirements of the Graduate College, consideration is also given to language study, relevant work experience, letters of reference, Graduate Record Examination aptitude test scores, and evidence of leadership. International students must score at least 600 on the Test of English as a Foreign Language. The Certificate of Advanced Study and Doctor of Philosophy programs require a master's degree in librarianship from a library school with an ALA-accredited program and a grade-point average of at least 4.0 (A = 5.0) in the master's program. For the Doctor of Philosophy program, two years of library work experience at the professional level and an interview with the school's doctoral committee are also required.

Master of Science. Ten units of graduate study, including 2 units of Library and Information Science 300, are required of all students. Possible areas of specialization include all main types of libraries (e.g., academic, public, school, and special), all main types of work in libraries (e.g., cataloging, reference, and children's services), plus other concentrations such as information science, library automation, rare books, archives. A thesis is not required but is available as an option. A minimum of twelve months is required to complete the master's program.

Certificate of Advanced Study (CAS). The certificate is awarded upon the successful completion of 10 units of graduate course work beyond the master's degree. Of the 10 units, at least 6, including Library and Information Science 459 (CAS Project), must be in library and information science. Students and advisers work closely together in selecting appropriate courses of study to meet individual needs. A minimum of twelve months is required to complete the CAS program.

Doctor of Philosophy. The program consists of three stages: (1) generalization (9 units of course work required of all doctoral students), (2) specialization (3 or more units plus a research tool), and (3) thesis (8 or more units). Thus, a minimum of 12 units of graduate course work plus 8 units of thesis credit are required. A minimum of

two years is required to complete the necessary course work; an additional year or more, preferably in residence, is required for the thesis.

Financial Aid. Financial aid is available from the school, the University of Illinois Library, area libraries, and the like, in the form of graduate assistantships, preprofessional positions, and hourly paid work. Also, the school has a limited number of fellowships and tuition waivers for which doctoral students tend to be favored over CAS and master's students.

Research Interests, Facilities, and Resources. Major areas of faculty research interest include bibliography, cataloging and classification, information storage and retrieval, library automation, nonprint media, library services for children and young adults, and reference tools and services. The school's Library Research Center engages in applied and pure research on contract; staff members of the Library Research Center are available to students and faculty for consultation and guidance. The University of Illinois Library provides a vast reservoir of resources for all types of study and research in library and information science.

The school maintains an ongoing commitment to continuing education through conferences, institutes, workshops, and special course offerings. Of particular note are the annual Allerton institutes and clinics on library applications of data processing. An extensive publications program includes the annual *Proceedings* of each of these, plus *Library Trends, Occasional Papers,* and a variety of monographs.

LIFE SCIENCES

(Including Interdepartmental Biology Programs; Anatomical Sciences; Botany; Ecology, Ethology, and Evolution; Entomology; Genetics and Development; Microbiology; and Physiology and Biophysics)

Director of the School: Joseph R. Larsen
Correspondence and Information: Director of the School of Life Sciences, University of Illinois at Urbana-Champaign, 393 Morrill Hall, 505 South Goodwin Avenue, Urbana, Illinois 61801

Graduate Degree Programs. The School of Life Sciences includes the Provisional Department of Anatomical Sciences and the Departments of Botany; Ecology, Ethology, and Evolution; Entomology; Genetics and Development; Microbiology; and Physiology and Biophysics. Study programs leading to the graduate degrees of Master of Science and Doctor of Philosophy exist in each of the departments and are described in detail on the following pages. In addition, interdepartmental study programs leading to the Ph.D. degree in cell biology, ecology, neural and behavioral biology, parasitology, and plant physiology are administered within the school. The school also participates with other departments of the University of Illinois at Urbana-Champaign in offering the Ph.D. program in genetics (see page 105).

Financial Aid. Support for graduate training is available in the form of teaching or research assistantships and University Fellowships. Prospective students may obtain application forms and relevant information for departmental study programs from the executive officer of the appropriate department or for interdepartmental study programs from the School of Life Sciences.

Interdepartmental Biology Programs

Executive Officer of Biology Programs: Linda R. Maxson
Correspondence and Information: Biology Programs, University of Illinois at Urbana-Champaign, 393 Morrill Hall, 505 South Goodwin Avenue, Urbana, Illinois 61801

Graduate Degree Programs, Admission. Interdepartmental biology programs lead to the Ph.D. in cell biology, ecology, neural and behavioral biology, parasitology, and plant physiology. Biology programs also participate in the administration of the Ph.D. program in genetics (see page 105). Additionally, two master's programs (M.S. in Biology, and M.S. in the Teaching of Biological Sciences and General Science) are offered. Graduate Record Examination scores are required for all Ph.D. programs and for the M.S. in the Teaching of Biological Sciences and General Science. All applicants also must outline their educational objectives in a brief statement and must submit three letters of recommendation.

Master of Science in the Teaching of Biological Sciences and General Science. This degree is intended for persons planning to enter the teaching profession or who presently are teaching biology or general science in junior high school, high school, or junior college. It is awarded upon the completion of the fifth year in the teacher-education curriculum in biological and general science or upon completion of 8 units of advanced credit (outlined below) and certification. For admission to this program, students must have an admission average of at least 4.0 (A = 5.0), and Graduate Record Examination scores must be submitted.

Candidates for the Master of Science in the Teaching of Biological Sciences and General Science must earn 4 units in biological sciences, 2 units in education (see page 91), and 2 units in electives. Electives may be in the biological sciences, education, or, in exceptional cases, other fields. A course in biological chemistry is strongly advised. Students who are preparing for high school teaching and who are not yet certified must fulfill state certification requirements.

Master of Science in Biology. This program is designed by the student in consultation with an appropriate adviser. While general training in biology is encouraged, concentration in any area of biology is possible as well; however, students intending to concentrate in botany, entomology, microbiology, animal physiology, or biophysics should apply directly to the appropriate School of Life Sciences departmental graduate program. Admission requires a grade-point average of at least 4.0. Although no specific undergraduate courses are required for admission to this curriculum, a minimum of a year of physics with laboratory, a course in organic chemistry with laboratory, and a semester of calculus must be completed before a degree is granted. Of the 8 units required for the degree, at least 3 units must be taken in 400-level courses. A thesis is not required, but a research report covering at least 1 unit of individual problem work must be completed. A comprehensive examination may be required of all candidates.

Doctor of Philosophy in Biology. The School of Life Sciences offers the doctorate in several interdepartmental areas: cell biology, ecology, neural and behavioral biology, parasitology, and plant physiology. Entrance requirements, in addition to those listed for the Master of Science degree, include background training in general biology, physics, biochemistry, and calculus; deficiencies in these areas may be remedied during the first year of graduate study. Programs are designed to suit individual needs in consultation with advisers. Students who have been accepted for one of these programs may select as a major adviser a faculty member from any department in the School of Life Sciences or an appropriate member of a cooperating department. Additional information may be obtained from the School of Life Sciences. Descriptions of these area doctoral programs are given below.

Anatomical Sciences. See page 126.

Cell Biology. The cell biology program emphasizes molecular mechanisms and is therefore addressed to students who have acquired or wish to acquire a strong background in chemistry. Areas of research open to students in this program include cytochemistry, biochemistry of subcellular systems, cellular differentiation, intercellular regulation of meiosis and mitosis, circadian rhythms, cellular genetics, and virology.

Ecology. The ecology program is an interdepartmental approach to the study of the basic interrelationships between organisms and their environment, and the structure and the function of ecosystems. Areas of specialization include basic applied aspects of physiological, population, community, systems, and evolutionary ecology.

Ecology, Ethology, and Evolution. See page 128.

Genetics and Development. See page 129.

Neural and Behavioral Biology. This multidisciplinary program includes staff members from physiology, psychology, biochemistry, biophysics, anatomical sciences, ethology, engineering, veterinary medicine, and basic medical sciences. The program is heavily research oriented with individually tailored plans of study designed to provide students with a strong background in the collective disciplines of neurobiology and in the students' specific areas of concentration. Research areas include neuroanatomy, neurochemistry, neuroendocrinology, neurobiological development and genetics, neurophysiology, and ethology and physiological psychology.

Parasitology. The parasitology program is an interdisciplinary program for the study of parasites and their relationships to their environment, whether the environment be plant, animal, field, stream, lake, or ocean. The program is coordinated under the biology Ph.D. program and supervised by an executive committee, appointed by the director of the School of Life Sciences. The program is staffed by scientists from the Colleges of Agriculture, Liberal Arts and Sciences, and Veterinary Medicine, and from the State of Illinois Natural History Survey. Opportunity for doctoral research is provided in any of these units. The curriculum is tailored to the specific aims and needs of the individual student in consultation with his or her adviser and committee.

Plant Physiology. Plant physiology, an interdepartmental area of specialization, is staffed by plant physiologists from five plant science departments: agronomy, botany, forestry, horticulture, and plant pathology. Thesis research can be conducted in any of these departments. Areas of research include photosynthesis, respiration, membrane transport, nitrogen metabolism, hormones and nucleic acids, herbicide action, water relations, environmental physiology, and disease physiology. In addition to plant physiology, students are required to complete courses in biochemistry and physical chemistry.

Anatomical Sciences

Head of the Provisional Department: C. R. Leeson

Correspondence and Information: Provisional Department of Anatomical Sciences, University of Illinois at Urbana-Champaign, 190 Basic Medical Sciences, 506 South Mathews Avenue, Urbana, Illinois 61801

GRADUATE FACULTY

Professors: L. Barr, W. T. Greenough, C. R. Leeson, D. L. Stocum

Associate Professors: L. L. Klepinger, A. Kokko-Cunningham

Assistant Professors: J. A. Cameron, M. A. Holzwarth, J. E. Mittenthal, J. A. Weyhenmeyer

Graduate Degree Program. The Provisional Department of Anatomical Sciences administers a graduate degree program as an area of specialization in biology. Anatomical sciences are concerned with the structural aspects of organisms and comprise: (1) gross anatomy, which emphasizes the macroscopic organization and integrated function of organisms; (2) microscopic anatomy, which deals with the structure and function of cells, tissues, and organs; (3) functional neuroanatomy, which is concerned with the structure and function of the nervous system; and (4) developmental anatomy, which encompasses morphogenesis, cell differentiation, and growth.

Admission. Applications are evaluated on an individual basis. The formal entrance requirement is a minimum grade-point average of 4.0 (A = 5.0). Important factors in the evaluation of applications are general academic performance, background in the physical sciences, and letters of recommendation from college professors. Applicants are expected to have had chemistry through organic, general physics, mathe-

matics through calculus, biology including some genetics, general physiology, and some morphology and/or embryology. The prospective student must submit results of the Graduate Record Examination. Although applications from qualified students are considered throughout the year, deadline for submission of applications is July 1.

Doctor of Philosophy in Biology: Anatomical Sciences Area of Specialization. The program leads to the Doctor of Philosophy degree and stresses the application of biological structure in the analysis and interpretation of biological processes. In order to successfully complete the graduate program in anatomical sciences, the student must fulfill requirements in the following categories: course work, qualifying examination, preliminary oral examination, defense of the thesis, teaching, and departmental seminars. A brochure providing additional information about the program is available upon request.

Financial Aid. Financial aid is available to a limited number of qualified applicants in the form of: (1) University Fellowships and tuition and fee waivers, awarded on a competitive basis; (2) teaching assistantships, awarded by the department; and (3) research assistantships, allotted by individual faculty members with research funds available for this purpose.

Botany

Head of the Department: Fakhri A. Bazzaz
Correspondence and Information: Associate Head of the Department of Botany, University of Illinois at Urbana-Champaign, 289 Morrill Hall, 505 South Goodwin Avenue, Urbana, Illinois 61801

GRADUATE FACULTY

Professors: F. A. Bazzaz, J. S. Boyer, Z. B. Carothers, R. E. Crang, J. M. J. de Wet, D. B. Dickinson, Govindjee, C. H. Grunwald, J. B. Hanson, L. R. Hoffman, F. Meins, W. L. Ogren, T. L. Phillips, D. P. Rogers, D. S. Seigler, R. W. Tuveson
Associate Professors: J. L. Crane, M. L. Sargent, C. A. Shearer, C. A. Wraight
Assistant Professors: C. K. Augspurger, R. W. Carlson, J. M. Cheeseman, T.-H. Ho, D. R. Ort, C. J. Whitmarsh

Graduate Degree Programs. The Department of Botany offers graduate work leading to the Master of Science and Doctor of Philosophy degrees. It also participates in interdepartmental study programs leading to doctoral degrees in cell biology, ecology, genetics, and plant physiology.

Areas of specialization available within the department include: anatomy, bioenergetics, biophysics, circadian rhythms, development, ecology, genetics, mycology, paleobotany, photosynthesis, phycology, physiology, phytochemistry, population biology, systematics, and ultrastructure. Graduate students are expected to acquire reasonable breadth in their botanical backgrounds as well as depth in their areas of specialization. A knowledge of the principles of ecology, genetics, morphology, physiology, and systematics is strongly recommended.

Teaching assistantships, fellowships, and research assistantships are available for qualified students. Any student who is awarded a fellowship may elect to have his or her stipend augmented with a part-time teaching or research assistantship.

A brochure, providing additional information about the department, its facilities, and the research interests of its faculty, is available from the associate head upon request.

Admission. All applicants for admission are considered on an individual basis. While departmental requirements do not specify particular courses as prerequisites for admission, applicants should have had some undergraduate training in botany or biology and related sciences. Graduate Record Examination scores are required. Graduate College admission requirements also apply.

Master of Science. Candidates for the M.S. degree are expected to fulfill the requirements of the Graduate College, and to broaden and deepen their training in a program of course work and research agreed upon with a faculty adviser. A thesis may be required at the option of the candidate's adviser.

An evaluation of each student's academic progress will be made at the end of his or her second year of graduate study; departmental approval must be obtained at this juncture to continue in a graduate degree program.

Doctor of Philosophy. Candidates for the doctorate are expected to fulfill the requirements of the Graduate College in a program of course work and research under the supervision of a faculty adviser. The department requires a minimum of one foreign language to be completed prior to the preliminary examination, usually chosen from French, German, Latin, Russian, or Spanish. More than one foreign language may be required at the option of the adviser.

Each student's academic progress will be evaluated during the first two years of graduate study and departmental approval is required to continue toward the Ph.D. degree.

Ecology, Ethology, and Evolution

Head of the Department: E. M. Banks

Correspondence and Information: Department of Ecology, Ethology, and Evolution, University of Illinois at Urbana-Champaign, 515 Morrill Hall, 505 South Goodwin Avenue, Urbana, Illinois 61801

GRADUATE FACULTY

Professors: E. M. Banks, G. O. Batzli, T. H. Frazzetta, L. L. Getz, A. W. Ghent, J. Hirsch, D. F. Hoffmeister, J. R. Karr, W. P. Lowry, S. L. Portnoy, M. Salmon, G. C. Sanderson, M. F. Willson

Associate Professors: C. S. Carter-Porges, E. E. Herricks, G. H. Kieffer, M. R. Lee, L. R. Maxson, D. C. Sweeney

Assistant Professors: N. Burley, M. R. Lynch

Graduate Degree Programs. The Department of Ecology, Ethology, and Evolution administers graduate degree programs as areas of specialization in biology. Areas of training include ethology, functional anatomy, physiological mechanisms of behavior, evolutionary community and population ecology, biogeography, quantitative analysis of behavioral and ecological systems, resource management, behavior-genetics, karyotype analysis, systematics, and taxonomy.

Admission. Acceptance for graduate study in ecology, ethology, and evolution is based on the applicant's research potential and academic achievement. An undergraduate degree in the life sciences is the usual preparation, but students majoring in mathematics, computer science, or the physical and social sciences are also considered. Courses required for admission are inorganic and organic chemistry, biochemistry, and a year of physics and mathematics through calculus. Students lacking one or more of these courses may be admitted with the provision that such deficiencies be completed in addition to the normal graduate course load. A grade-point average of at least 4.0 (A = 5.0) for the last 60 hours of undergraduate work in addition to any graduate study is mandatory, and high scores on the Graduate Record Examination are necessary. Considerable emphasis is placed on a student's interest and ability in research as demonstrated by previous work and letters of recommendation.

Master of Science. With approval of the M.S. biology committee, students in ecology, ethology, and evolution may pursue an M.S. degree in biology under the supervision of a departmental adviser (see Master of Science in Biology, page 125).

Doctor of Philosophy in Biology: Ecology, Ethology, and Evolution Area of Specialization. Candidates for the Ph.D. degree must demonstrate excellence in the three de-

partmental areas and, in consultation with an adviser and doctoral committee, plan and carry out original thesis research with distinction. A qualifying examination covering general knowledge is given early in the student's program, and a preliminary examination assessing the feasibility and significance of the thesis research is taken as the student begins thesis work. Courses in both statistics and computer science are required, and proficiency in one or more foreign languages may be required depending on the field of research. Additional requirements are individually prescribed by the adviser and doctoral committee. A final examination in which the student defends the thesis and a presentation of the thesis at a departmental seminar complete the program.

Entomology

Head of the Department: Stanley Friedman
Correspondence and Information: Admissions Committee, Department of Entomology, University of Illinois at Urbana-Champaign, 320 Morrill Hall, 505 South Goodwin Avenue, Urbana, Illinois 61801

GRADUATE FACULTY

Professors: G. Fraenkel, S. Friedman, A. W. Ghent, W. R. Horsfall, M. Kogan, W. E. LaBerge, J. R. Larsen, W. H. Luckmann, R. L. Metcalf, R. B. Selander, J. G. Sternburg, G. P. Waldbauer, J. H. Willis
Associate Professors: F. Delcomyn, E. G. MacLeod, J. V. Maddox, W. G. Ruesink
Assistant Professors: S. Berlocher, M. R. Berenbaum, B. R. Miller

Graduate Degree Programs. The Department of Entomology offers graduate work leading to the Master of Science and Doctor of Philosophy degrees.

Admission. The Graduate College admission requirements apply. Previous training in entomology is not necessary. It is recommended that students who intend to study for advanced degrees in entomology gain a thorough grounding in the physical and biological sciences, mathematics, and the liberal arts.

Master of Science. A candidate for the M.S. degree is expected to become knowledgeable in entomology through course and field work and to complete a research thesis in an area of interest arrived at in consultation with an adviser. The grade-point average required for degree certification is 4.0 (A = 5.0).

Doctor of Philosophy. A candidate for the Ph.D. degree must master the general areas of entomology (ecology, control, morphology, physiology, and taxonomy) and demonstrate professional competence in a specialized area by presenting an acceptable thesis based on original research. Reading proficiency in a foreion language of importance to the area of research, ordinarily German or Russian, is also required. The grade-point average required for degree certification is 4.0.

Financial Aid. Awards for graduate students are available, including teaching and research assistantships. In addition, various types of fellowships, traineeships, and tuition and service fee waivers are offered by the Graduate College and the School of Life Sciences. A single application to the department is sufficient for consideration for all awards currently available.

Genetics and Development

Head of the Department: E. H. Brown
Correspondence and Information: Department of Genetics and Development, University of Illinois at Urbana-Champaign, 515 Morrill Hall, 505 South Goodwin Avenue, Urbana, Illinois 61801

GRADUATE FACULTY

Professors: F. J. Kruidenier, J. R. Laughnan, F. Meins, D. L. Nanney, R. B. Selander, D. M. Steffensen, D. L. Stocum, R. W. Tuveson, R. L. Watterson, G. S. Whitt, J. H. Willis, C. R. Woese

Associate Professors: N. E. Alger, E. H. Brown, W. L. Daniel, R. Davenport, E. G. MacLeod, R. MacLeod, L. R. Maxson, M. L. Sargent, J. T. Wachsman

Graduate Degree Program. The Department of Genetics and Development offers graduate study leading to the Doctor of Philosophy in Biology degree in the genetics and development area of specialization. Major areas of research interest include molecular, cellular, developmental, and evolutionary genetics; pattern formation in development; morphogenesis and regeneration; immunology; and molecular evolution. Biological systems are studied at many levels of integration and with a wide variety of organisms. Students seeking a master's degree are directed to the Master of Science in Biology program offered by the School of Life Sciences. Financial support is provided to qualified students by the Department of Genetics and Development in the form of teaching assistantships, research assistantships, or fellowships. A brochure providing detailed information about the doctoral program is available from the department office upon request.

Admission. Applicants are evaluated on the basis of their educational background, grade-point average, which must be at least 4.0 (A = 5.0); Graduate Record Examination scores, which should be above the 60th percentile; research interests and experience; and letters of recommendation. Applicants should have completed college-level courses in calculus, inorganic and organic chemistry, biochemistry, physics, statistics, and a foreign language, and should have broad training in the biological sciences. Applicants who have received an M.S. degree must meet these same requirements and must have at least a 4.0 (A = 5.0) grade-point average for nonthesis courses which were applied to the M.S. degree.

Doctor of Philosophy in Biology: Genetics and Development Area of Specialization. Students plan a suitable program of study in consultation with an advising committee during the first year and then plan a thesis research program in consultation with a research adviser and a doctoral committee. The training program must include at least 6 units of formal course work pertaining to the student's area of interest with at least one course each in the areas of cell biology, genetics, and developmental biology. Participation in appropriate seminar courses for at least two semesters and reading proficiency in a foreign language (usually French, German, or Russian) are also required. A written and oral qualifying examination, assessing the student's breadth of training, competence in a specialty, and ability to integrate and communicate knowledge, is taken early in the second year. An oral preliminary examination, assessing the feasibility of the thesis research and the student's ability to conduct independent research, is taken during the second or third year. The student defends the thesis at an oral final examination.

Microbiology

Head of the Department: R. D. DeMoss

Correspondence and Information: Department of Microbiology, University of Illinois at Urbana-Champaign, 131 Burrill Hall, 407 South Goodwin Avenue, Urbana, Illinois 61801

GRADUATE FACULTY

Professors: M. P. Bryant, J. E. Cronan, R. D. DeMoss, R. E. Kallio, S. Kaplan, J. Konisky, R. C. Meyer, M. E. Reichmann, D. C. Savage, E. W. Voss, C. R. Woese, R. S. Wolfe

Associate Professors: S. J. Kaufman, J. T. Wachsman, M. J. Weber, P. K. Y. Wong

Assistant Professors: J. F. Gardner, A. A. Salyers, J. F. Scott

Graduate Degree Programs. The Department of Microbiology offers graduate work leading to the Master of Science and Doctor of Philosophy degrees. For both degrees, the program provides a strong basic background in microbiology, biochemistry, and genetics. Students completing the program are qualified for positions in academic, industrial, or governmental environments and particularly for further specialization in a chosen subarea of microbiology and related disciplines.

Major areas of research interest are: genetics and molecular biology of viruses, procaryotes, and eucaryotes; enzyme structure and function; immunology; immunochemistry; rumen microbiology; intestinal microbiology; development of specialized cells, biochemistry of anaerobic bacteria; mechanisms of pathogenesis; metabolic regulation; microbial physiology; animal cell biology; and structure, function, and biogenesis of membranes.

Admission. Students electing microbiology as a major for an advanced degree should have had, in addition to formal training in general biology or microbiology, chemistry through quantitative analysis, and organic chemistry, 15 hours of physical or biological sciences. Mathematics through calculus is strongly recommended.

Master of Science and Doctor of Philosophy. Candidates for graduate degrees design their programs of study in consultation with individually assigned faculty committees. Study programs are flexible and are dependent upon the experience, interests, and goals of each student.

A foreign language is not required for the M.S. or Ph.D. degrees.

Physiology and Biophysics

Head of the Department: James E. Heath

Correspondence and Information: Department of Physiology and Biophysics, University of Illinois at Urbana-Champaign, 524 Burrill Hall, 407 South Goodwin Avenue, Urbana, Illinois 61801

GRADUATE FACULTY

Professors: L. Barr, D. E. Buetow, J. A. Connor, A. R. Crofts, P. G. Debrunner, E. Donchin, H. S. Ducoff, F. Dunn, T. G. Ebrey, H. Frauenfelder, Govindjee, W. T. Greenough, J. E. Heath, S. I. Helman, B. A. Hertig, J. R. Larsen, A. V. Nalbandov, C. L. Prosser, V. D. Ramirez, E. Satinoff, I. A. Siegel, W. W. Sleator, H. M. Swartz, A. R. Twardock, G. Weber, J. S. Willis

Associate Professors: J. M. Bahr, F. Delcomyn, A. L. DeVries, R. B. Gennis, E. G. Jakobsson, B. S. Katzenellenbogen, B. W. Kemper, O. D. Sherwood, S. G. Stolpe, D. C. Sweeney, C. A. Wraight, J. E. Zehr

Assistant Professors: P. M. Best, A. S. Feng, R. Gillette, B. L. Johns, K. J. Kaufmann

Graduate Degree Programs. The Master of Science and Doctor of Philosophy degrees are granted in both physiology and biophysics.

PHYSIOLOGY

Admission and Financial Aid. Graduate College admission requirements apply. Applicants for graduate study in physiology are screened by an admissions committee. Students should have a broad undergraduate training in physiology, general biology, a premedical course, or a major in chemistry or zoology. Most students admitted in the last two years have had a grade-point average between an A and B, and letters of recommendation that indicated ability to perform graduate work. A limited number of fellowships and teaching or research assistantships are available for qualified students.

Master of Science. A master's degree requires 8 or more units of graduate work drawn from the offerings of this and other departments. Each student must submit

a report based on original research and pass an oral examination administered by the physiology qualifying committee.

Doctor of Philosophy. Every candidate for the Ph.D. degree is required to obtain a firm background in the general areas of mammalian, comparative, and cellular physiology, as well as a high degree of expertise in an area of specialization. The student is also expected to develop proficiency in biochemistry, physical chemistry, and statistics, and have a general knowledge of the history and philosophy of science.

The preliminary examination is taken after completion of at least 16 units of graduate course work, after completion of all courses specified by the student's advisory committee, and after satisfying the foreign language requirement. A thesis based on original work and demonstrating thorough knowledge of theory and techniques in one of the branches of physiology must be presented to a review committee before the final examination.

BIOPHYSICS

Admission and Financial Aid. The objective of the program in biophysics is to give students sufficient training in physics, chemistry, and biology to enable them to apply the conceptual, instrumental, and mathematical approaches of the physical sciences to the solution of biological problems. The curriculum is broadly based, and provides an adaptable approach for students entering with previous training in the physical sciences or for students with a background in biology and some experience in the physical sciences. Admission requirements are normally one year of college biology, one year of college physics, chemistry through organic chemistry, and mathematics through calculus, but deficiencies can be corrected while in training. Applicants must have an admission average of at least 4.0 (A = 5.0). Fellowships, traineeships, and teaching or research assistantships are available for qualified students. Normally students are expected to gain at least one semester of teaching experience during their graduate careers.

Master of Science. To obtain the Master of Science degree, the student must complete at least 8 units in biophysics and related subjects, including 3 units at the 400 level, of which 2 units must be in biophysics courses (excluding individual topic courses, seminars, and research). A thesis or research paper in a specialized field is also required.

Doctor of Philosophy. A flexible approach is made to curriculum requirements, but an acceptable course program usually includes the following: (1) Physical sciences: mathematics through differential equations, physics and physical chemistry including thermodynamics and elementary quantum mechanics, and biochemistry with laboratory. (2) Biophysics: satisfactory completion of 2½ units of 400-level biophysics courses (excluding individual topic courses, seminars, and research). Other subjects may be taken with the approval of faculty. (3) Students are encouraged to gain research experience as soon as practicable after admission; the Ph.D. degree is a research degree, and the program is designed with a major emphasis on individual research.

A pass-fail qualifying examination is usually taken during or before the fourth semester. After the student has formulated a definite research problem, he takes the preliminary examination in which this topic is presented to a faculty committee. The committee also will question the candidate on his general research area. The requirement of one foreign language should be satisfied prior to the preliminary examination. Finally, a thesis based on original work and demonstrating a thorough knowledge of theory and techniques in one of the areas of biophysics must be defended at the final examination.

LINGUISTICS

(Including Arabic, Modern and Classical Hebrew, Hindi, Persian, and African Languages)

Chairperson of the Department: CHIN-W. KIM

Correspondence and Information: Department of Linguistics, University of Illinois at Urbana-Champaign, 2090 Foreign Languages Building, 707 South Mathews Avenue, Urbana, Illinois 61801

GRADUATE FACULTY

Professors: E. H. Antonsen, K. O. Aston, W. C. Blaylock, G. M. Browne, J. B. Casagrande, C. C. Cheng, C. L. Dawson, P. A. Gaeng, B. B. Kachru, Y. Kachru, M. J. Kenstowicz, C.-W. Kim, C. W. Kisseberth, F. K. Lehman, H. Maclay, J. W. Marchand, C. Osgood, I. Rauch, M. Saltarelli, G. L. Tikku, W. R. Zemlin, L. Zgusta

Associate Professors: D. E. Baron, L. F. Bouton, H. D. Brown, P. Cole, J. R. Cowan, W. B. Dickerson, R. Dunatov, F. Y. Gladney, G. M. Green, H. H. Hock, F. M. Jenkins, S. Makino, J. L. Morgan, D. L. Petersen, B. A. Sherwood, D. Wanner

Assistant Professor: E. G. Bokamba

Professor Emeritus: H. R. Kahane

Graduate Degree Programs. The Department of Linguistics offers graduate programs leading to the Master of Arts and Doctor of Philosophy degrees. Work toward these degrees is divided into three areas. General linguistics includes historical linguistics, phonology, semantics, and syntax. Applied linguistics covers computational linguistics, experimental phonetics, language acquisition, lexicography, psycholinguistics, sociolinguistics, and stylistics. Area linguistics may be undertaken with a concentration, for example, in African, Romance, Semitic, and South, West, or East Asian linguistics.

Admission. Undergraduate preparation for admission to the master's program in linguistics should include the equivalent of Linguistics 300, 301, and 302; at least three years of foreign language experience (familiarity with two foreign languages is recommended); and a broad background in the humanities, social sciences, and mathematics. The Graduate College admission requirements apply.

Master of Arts in General or Applied Linguistics. The aim of the master's program is to instruct students in the important areas of linguistics and the methods of linguistic analysis. Candidates for this degree must earn 8 units, including courses in syntax, phonology, history of linguistics, and an area of specialization. Those concentrating on the general program are required to take Linguistics 340, 401, 402, 411, 441, and 442. The applied program requires Linguistics 305, 325, 340, 350, 401, and 402. In addition, the student must have proficiency in one language (other than his or her native tongue) in which there exists a significant body of linguistic literature and must pass the comprehensive qualifying examination. Admission to this examination is contingent upon satisfying the language requirement. For a terminal master's degree without the qualifying examination, a master's essay must be written in addition to the 8 units.

Doctor of Philosophy in General or Applied Linguistics. Admission to candidacy for the Ph.D. normally requires a grade-point average of 4.5 or better for all graduate work in linguistics and distinction in passing the comprehensive qualifying examination. In deciding whether a student will be admitted to the Ph.D. program, the examination and student evaluation committee takes into consideration the student's overall performance in the department, potential for linguistic research, and performance on the qualifying examination.

Candidates for this degree must complete at least 24 units of graduate work, or 16 units beyond the master's degree. The minimum 24 units must include the course requirements listed above for the master's degree (or their equivalent), advanced courses as required for the area of specialization, and 8 units of thesis research. Candidates must also demonstrate proficiency in a second language other than English. However, this second language requirement is made flexible depending on the research interest of the student. The candidate is required to take the preliminary examinations (written and oral) after completion of 8 units beyond the master's level. Students are encouraged to attend at least one summer session of the Linguistic

Institute of the Linguistic Society of America. Up to 2 units of credit granted by the host university under this program may be transferred. Students of descriptive linguistics also are urged to establish a vested interest and a firm basic foundation in some particular language family as early as possible in their graduate career. Linguistically oriented courses in related departments may be counted toward the major if approved by the adviser. The head of the department acts as general adviser to each student until the selection of the field of concentration, at which time the student comes under the guidance of an adviser in his or her special area.

MATERIALS SCIENCE

The Materials Research Laboratory supports research and training of graduate students in the materials sciences. However, the laboratory is not itself a degree-granting unit. A student interested in study in materials science should apply directly to one of the departments which cooperates in research at the laboratory. These are the Departments of Ceramic Engineering, Chemical Engineering, Chemistry, Electrical Engineering, Geology, Metallurgy and Mining Engineering, and Physics.

MATHEMATICS

(Including Statistics)

Head of the Department: Heini Halberstam
Graduate Adviser: W. Zaring
Correspondence and Information: Graduate Adviser, Graduate Advising Office, Department of Mathematics, University of Illinois at Urbana-Champaign, 259 Altgeld Hall, 1409 West Green Street, Urbana, Illinois 61801

GRADUATE FACULTY

Professors: F. R. Albrecht, K. I. Appel, R. B. Ash, S. B. Bank, R. G. Bartle, P. T. Bateman, I. D. Berg, E. R. Berkson, B. C. Berndt, R. L. Bishop, S. Blumenthal, R. E. Bohrer, W. W. Boone, P. G. Braunfeld, J. D. Buckmaster, D. L. Burkholder, R. W. Carroll, K. T. Chen, E. C. Dade, R. B. Davis, M. M. Day, H. G. Diamond, E. G. Evans, Jr., R. M. Fossum, C. W. Gear, S. I. Goldberg, J. W. Gray, P. A. Griffith, W. R. G. Haken, H. Halberstam, M. E. Hamstrom, L. L. Helms, C. W. Henson, G. J. Janusz, R. P. Jerrard, C. G. Jockusch, S. S. Jogdeo, F. W. Kamber, R. P. Kaufman, F. B. Knight, R. G. Langebartel, P. A. Loeb, R. J. McEliece, J. G. Miles, D. E. Muller, H. A. Osborn, E. T. Parker, A. L. Peressini, W. V. Philipp, H. A. Porta, S. L. Portnoy, R. R. Rao, I. Reiner, D. J. S. Robinson, N. J. Rothman, J. J. Rotman, L. A. Rubel, P. E. Schupp, E. J. Scott, K. B. Stolarsky, W. E. Stout, M. Suzuki, G. Tadeuti, T. W. Ting, P. M. Tondeur, J. J. Uhl, Jr., S. V. Ullom, J. H. Walter, P. M. Weichsel, R. A. Wijsman
Associate Professors: J. R. Alexander, Jr., S. B. Alexander, A. Babakhanian, H. E. Benzinger, Jr., J. W. Brown, R. F. Craggs, L. L. Dornhoff, A. C. Fauntleroy, W. A. Ferguson, G. K. Francis, S. P. Han, H. P. Lotz, L. R. McCulloh, L. McLinden, C. J. Moreno, J. I. Palmore, N. T. Peck, D. R. Sherbert, E. C. Weinberg, J. E. Wetzel, J. M. Wu, W. M. Zaring
Assistant Professors: J. P. D'Angelo, D. R. Grayson, J. I. Marden, A. Martinsek, D. Monrad, T. D. Morley, R. G. Muncaster, B. A. Reznick

Graduate Degree Programs. The department offers graduate study leading to the Master of Science (or of Arts) and the Doctor of Philosophy in Mathematics, the Master of Science in the Teaching of Mathematics, and the Master of Science (or of Arts) and the Doctor of Philosophy in Statistics. An advanced certificate in com-

munity college mathematics teaching is also available. For detailed information regarding any of these programs, write directly to the graduate adviser.

Admission. The Graduate College admission requirements apply. Students may be admitted with full standing if they hold a strong undergraduate degree in mathematics. Students whose undergraduate training in mathematics is deficient may be admitted with deficiencies to be removed during the first year of graduate study.

Statistics. This program of study is for those who wish to concentrate on research in the theory of statistics and to obtain training in the theory and practice of statistical inference from quantitative data. It also provides an appropriate minor for those who wish to develop competence in an area of application of statistics, such as agronomy, biology, chemistry, economics, education, geology, physics, or psychology. Also see page 162 for Statistics.

Master's Degree Programs. The master's programs can be completed in one year of full-time study by students entering without deficiencies. However, most students find it necessary to devote at least one additional summer or semester. Students entering with deficiencies may require up to two years to complete the degree. There are no thesis or language requirements, and no comprehensive examination is required.

The master's degree in mathematics requires a total of 8 units of study, of which 3 must be at the 400 level, and 2 of the 3 must be in mathematics. Additional course and sequence requirements can be satisfied through study in one of five different programs: (1) the general program, (2) the computation or optimization program, (3) the science applications program, (4) the operations research program, or (5) the actuarial mathematics program.

The master's in the teaching of mathematics requires a total of 8 units of study, of which 4 must be in mathematics and 2 must be in education.

The master's degree in statistics requires a total of 8 units of study, including at least 3 units which must be in 400-level courses, 2 of which must be approved courses in statistics. Mathematics 365 is required.

The advanced certificate in community college mathematics teaching is designed to be completed in two semesters following completion of a master's degree in mathematics. The program involves student teaching and specialized course work.

Doctoral Degree Programs. Students working toward one of the doctoral degrees usually require from four to six years to complete the requirements. These students must pass the qualifying examination (testing the content of undergraduate courses in abstract and linear algebra and real and complex analysis), pass the preliminary examination (testing the content of four areas of graduate mathematics selected by the student and approved by the department), and write a thesis in an area of mathematical research. A reading knowledge of two of the following languages is required: German, French, or Russian.

Financial Aid. Financial aid is available in the form of teaching assistantships, fellowships, and tuition and service fee waivers. The deadline for submission of complete fellowship applications is February 15. The initial deadline for submission of complete assistantship applications is also February 15, but applications are considered after that as long as positions remain available. For information write to the graduate adviser.

MECHANICAL AND INDUSTRIAL ENGINEERING

Head of the Department: B. T. Chao

Associate Head of Department for Research and Graduate Studies, Graduate Policy Committee Chairperson: A. L. Addy

Graduate Policy Committee Chairpersons: R. O. Buckius, R. E. DeVor

Correspondence and Information: Graduate Programs Office, Department of Mechanical and Industrial Engineering, University of Illinois at Urbana-Champaign, 144 Mechanical Engineering Building, 1206 West Green Street, Urbana, Illinois 61801

GRADUATE FACULTY

Professors: A. L. Addy, B. T. Chao, J. C. Chato, M. M. Chen, W. L. Chow, T. F. Conry, J. M. Crowley, J. E. Greene, B. G. Jones, H. H. Korst, H. Krier, F. A. Leckie, L. H. Sentman, S. L. Soo, W. F. Stoecker, J. J. Stukel, R. A. White

Associate Professors: R. O. Buckius, C. W. Bullard, A. M. Clausing, C. Cusano, M. I. Dessouky, R. E. DeVor, R. E. Klein, C. S. Larson, J. S. Liebman, D. H. Offner, C. O. Pedersen, L. D. Savage, D. F. Socie, S. C. Sorenson

Assistant Professors: M. J. Binder, W. E. Dunn, R. Engelbrecht-Wiggans, S. G. Kapoor, J. Mazumder, N. R. Miller, B. C. Muddle, T. A. Newell, J. E. Peters, R. E. Reid, C. L. Tucker

Graduate Degree Programs. The Department of Mechanical and Industrial Engineering offers work leading to the Master of Science in Mechanical Engineering, the Master of Science in Industrial Engineering, and the Doctor of Philosophy in Mechanical Engineering. In mechanical engineering, a student may specialize in any of the core areas including thermodynamics, heat transfer, fluid dynamics, multiphase systems, combustion, internal combustion engines, thermal systems including environmental control in buildings, environmental engineering and air pollution controls, solar energy, kinematics and dynamics of machinery, friction, lubrication and wear, control systems, man-machine systems, materials processing including solidification, powder metallurgy, and metal matrix composites, and bioengineering. Through these areas, the department has a strong commitment to energy-related research programs. In industrial engineering a student may specialize in any of the several areas of manufacturing systems, operations research, and human factors, including production control and quality control, man-machine systems, facilities planning and design, computer-aided manufacturing, mathematical programming, simulation, project management, and production process design.

Admission. The requirements governing admission are as follows. The applicant must: (1) be a graduate of an institution awarding a baccalaureate degree equivalent to that granted by the University of Illinois at Urbana-Champaign; (2) be adequately prepared for advanced study as demonstrated by his or her previous program of study and scholastic record; and (3) be recommended for admission by the Department of Mechanical and Industrial Engineering. A minimum grade-point average of 4.0 (A = 5.0) for the last 60 hours of undergraduate study is required. On rare occasions, the department may recommend an applicant for admission with limited standing even if the admission grade-point average is below the required departmental minimum. In this case, the Graduate College also must recommend admission. The department does not require the Graduate Record Examination, nor does it have a language requirement. Based upon the previous preparation of the student, prerequisite courses may be specified by the adviser, but the credit may not be applied toward a degree. The department requires a minimum TOEFL score of 590.

Master of Science. A thesis is required, but can be waived for students terminating their studies with the M.S. degree. A total of 8 units (including thesis credits) is required. A full-time student can complete this program in an academic year. Those not writing a thesis are required to offer a minimum of 9 units of credit. In such cases, the study program includes a unit of laboratory investigation since each student is required to show evidence of ability to do independent study.

Doctor of Philosophy. A master's thesis or equivalent is required of all applicants for Ph.D. study. Those students who enter with a master's degree and who have not written a thesis or the equivalent may be required to register in laboratory investigations during their first semester of residence on the Urbana-Champaign campus for the purpose of demonstrating their ability to do independent research. Qualifying examinations are to be taken during the semester in which the ninth unit of graduate credit is earned, at the earliest, but no later than the first semester thereafter. A total of 16 units of course work beyond the B.S. degree is a minimum course requirement for the Ph.D. degree. The minimum total requirement for the Ph.D. degree is 24 units, including

thesis research credit. In order to be considered for acceptance as a doctoral candidate, the student must prepare a thesis proposal and take an oral preliminary examination. If successful, the candidate completes the thesis work and takes a final oral examination.

MEDICAL SCHOLARS PROGRAM

The Medical Scholars program at the Urbana-Champaign campus enables students to combine the study of medicine with graduate or professional study in a second field. The program seeks to produce leaders in medicine uniquely qualified and motivated to address the compelling problems of health care and medical practice.

Medical scholars are expected to earn a combined degree — the M.D. and a graduate or professional degree. The Schools of Basic Medical Sciences and Clinical Medicine at Urbana-Champaign, one of four regional campuses of the University of Illinois College of Medicine, in cooperation with graduate departments and professional schools, offer the combined degree program. Applicants should be able to identify research interests and professional goals that demand the integration of medicine with a second field and cannot be accomplished with one degree alone. To enter the Medical Scholars Program, applicants must meet the admissions requirements and be accepted both by the University of Illinois College of Medicine and by the Urbana-Champaign campus academic unit in which they wish to study. They apply to the Medical Scholars Program at the same time that they apply to medical school.

Medical scholars are expected to fulfill all the requirements of both the College of Medicine and the second discipline. Faculty advisers from the medical school and from the appropriate Urbana-Champaign campus unit help students set up realistic long-term study plans which integrate the two fields.

At present, research-oriented programs of integrated study are available or being developed in the following academic units on the Urbana-Champaign campus:

Accountancy (GRE)
Anthropology (GRE, quantitative and verbal)
Architecture
Biochemistry (GRE optional)
Business Administration
Chemistry (GRE optional)
Computer Science
Economics
Education
Electrical Engineering
Food Science
Health and Safety Education
History (GRE, quantitative and verbal)
Law (LSAT)
Microbiology (GRE recommended)
Neural and Behavioral Biology (GRE)
Nuclear Engineering
Nutritional Sciences
Philosophy (GRE)
Physical Education
Physics (GRE, advanced physics)
Physiology and Biophysics (GRE recommended)
Political Science (GRE, quantitative, verbal, advanced)
Psychology (GRE)
Social Work
Sociology (GRE recommended)
Speech and Hearing Science

Arrangements with graduate units not listed here may be worked out, wherever possible, upon request.

Examination scores required in addition to the Medical College Admissions Test (MCAT) are noted in brackets; applicants must arrange to take such examinations and have the scores forwarded to the Office of Student Affairs of the Schools of Basic Medical Sciences and Clinical Medicine at the Urbana-Champaign campus.

For further information about the Medical Scholars Program, consult Associate Dean for Academic Affairs, Schools of Basic Medical Sciences and Clinical Medicine, University of Illinois at Urbana-Champaign, 190 Medical Sciences Building, 506 South Mathews Avenue, Urbana, Illinois 61801.

METALLURGY AND MINING ENGINEERING

Head of the Department: C. A. Wert
Correspondence and Information: Head of the Department, Department of Metallurgy and Mining Engineering, University of Illinois at Urbana-Champaign, 201 Metallurgy and Mining Building, 1304 West Green Street, Urbana, Illinois 61801

GRADUATE FACULTY

Professors: C. J. Altstetter, H. K. Birnbaum, A. J. deWitte, G. Ehrlich, P. H. Geil, J. E. Greene, F. V. Lawrence, M. Metzger, T. J. Rowland, C. M. Wayman, C. A. Wert
Associate Professors: H. Fraser, R. J. Gaylord, R. P. Wool
Assistant Professors: H. Chen, D. S. Phillips, J. M. Rigsbee
Professor Emeriti: P. A. Beck, R. W. Bohl

Graduate Degree Programs. The Department of Metallurgy and Mining Engineering offers graduate work leading to the Master of Science and Doctor of Philosophy in Metallurgical Engineering. The faculty members have a widely varied background of engineering and science, and graduates go into a broad range of industrial, governmental, and university positions. Close association exists with staff members in other departments having programs in the properties of solids. Graduate courses and thesis work in polymers is available at both the M.S. and Ph.D. levels.

Admission. Graduate students in metallurgical or mining engineering may have undergraduate degrees in a number of disciplines. Graduates with degrees in metallurgy or mining engineering fit into the graduate programs easily, as well as the many graduate students who come from other engineering or science disciplines. Graduates of departments of mechanical engineering, physics, chemistry, and ceramics are represented among our student body.

Master of Science. A candidate for the Master of Science is required to have a minimum of 8 units of graduate work, including a thesis. If a petition to waive the thesis is granted, a minimum of 9 units of graduate work is required. A thesis is required of candidates who hold research assistantships.

Doctor of Philosophy. Students desiring to work for the Doctor of Philosophy are required to pass the departmental qualifying examination. This oral examination must be taken no later than the end of the first semester after receiving the Master of Science from this department or after completing an equivalent amount of graduate work.

The minor requirement of the department for the Doctor of Philosophy may be satisfied by taking courses in fields such as ceramics, chemistry, geology, mathematics, theoretical and applied mechanics, nuclear engineering, and physics. Although reading knowledge of a foreign language is helpful, there is no formal requirement.

MUSIC

(Including Music Education and Musicology)

Director of the School: Robert E. Bays
Correspondence and Information: Office of Graduate Studies, School of Music, University of Illinois at Urbana-Champaign, 2136 Music Building, 1114 West Nevada Street, Urbana, Illinois 61801

GRADUATE FACULTY

Professors: R. Bays, H. Begian, H. Brun, R. Colwell, E. Dalheim, B. Edlefsen, T. Fredrickson, R. Gray, L. Gushee, J. Hamilton, W. Heiles, B. Johnston, C. Leonhard, J. Lyke, S. Martirano, B. Nettl, G. Perich, M. Powell,

C. Richards, A. Ringer, R. Smith, N. Temperley, R. Thomas, W. Warfield, T. Wisniewski
Associate Professors: J. Beauchamp, J. Hill, H. Kellman, D. Kohut, J. Melby, D. Peters, T. Ward, P. Zonn
Assistant Professors: M. Gushee, L. Rumery, D. Stigberg

Graduate Degree Programs. The School of Music offers graduate study leading to the Master of Music, Doctor of Musical Arts, Doctor of Philosophy in Musicology, Master of Science in Music Education, Doctor of Education in Music Education, and the Advanced Certificate in Music Education. Complete details of these programs may be found in the school's brochure on graduate study in music.

RESEARCH AND PROFESSIONAL CURRICULA

Master of Music. The fields of specialization for the M.Mus. degree are musicology, music theory, composition, performance and literature (piano, organ, voice, guitar, orchestral instruments), choral music, vocal accompanying and coaching, and group piano pedagogy.

Admission. Requirements for admission are a Bachelor of Music degree from the University of Illinois at Urbana-Champaign or an equivalent degree from another accredited institution (students holding other degrees may be admitted but will be expected to make up any deficiencies). Those majoring in musicology are generally expected to have a minimum grade-point average of 4.25 (A = 5.0). Applicants in performance and literature must pass a qualifying audition before their major division or submit satisfactory recordings. Applicants in musicology, theory, or composition must present writings or other evidence of their ability to pursue work at the graduate level.

Language Requirements. Applicants in voice are required to have had one year each at the college level or two years at the high school level of French, German, and Italian. Applicants in other applied music areas and in theory-composition are required to have had one year of any language at the college level. Applicants in musicology must give evidence of a reading knowledge of French or German. Students otherwise admissible may satisfy any language deficiencies concurrently with graduate studies.

Degree Requirements. Candidates for the M.Mus. degree in theory-composition and in performance and literature must earn at least 8 units, including 2 units at the 400 level in their major field and 1 unit in problems and methods. Candidates in performance and literature must earn 2 units in the music literature course in their major applied area. Candidates in musicology must earn 2 units in introduction to musicology and 2 units in the seminar in musicology. Electives in music theory, history, and literature, and other music and nonmusic courses will be chosen in consultation with the candidate's graduate adviser. A graduate recital is required of all candidates in performance and literature. Candidates in musicology and theory must write a thesis, for which 2 units of credit are given. Candidates in composition must present a portfolio of their works for approval by the composition faculty.

Doctor of Musical Arts. The fields of specialization for the D.M.A. degree are composition, piano, organ, choral music, voice, violin, viola, cello, wind instruments, and percussion instruments.

Admission. Prerequisites for admission are: (1) The M.Mus. degree from the University of Illinois at Urbana-Champaign, or an equivalent degree from another accredited institution, with a major in one of the areas of specialization listed above. (2) A high level of proficiency in composition or performance. Candidates in composition must submit original scores for review and candidates in performance and literature must pass a qualifying audition or submit satisfactory recordings. (3) Appropriate experience in ensemble performance and/or score reading. (4) The successful completion of approximately 32 semester hours (or the demonstration of an equivalent background) in the liberal arts and sciences, including a minimum of 6 hours in history and 6 hours in literature and philosophy; candidates in voice must have ful-

filled all foreign language requirements considered prerequisites for the M.Mus. degree.

Degree Requirements. Candidates must earn a minimum of 16 units beyond the requirements for the master's degree. The program is worked out in consultation with the student's graduate adviser in terms of special needs, interests, and abilities; it will ordinarily include a minimum of 3 units in the major field of specialization, 2 units in advanced music literature courses, and 2 units in a minor field. A preliminary examination is taken once all course work is completed.

Language Requirements. All candidates will be required to demonstrate proficiency in at least one language other than English. Each division may specify which language is required or may require proficiency in more than one language. Language requirements can be satisfied by evidence of two years of undergraduate study, by successful completion of a two-semester 400-level reading course, or by satisfactory test scores.

Doctoral Project and Thesis. In the fields of composition and of performance and literature, 6 units are devoted to a special doctoral project. Composers must produce a large-scale original score. Performers must demonstrate comprehensive repertory study in the form of two solo recitals, or one solo recital and two of the following options: a concerto; a major operatic or oratorio role; a chamber music program; a lecture-recital; or the preparation of and, when appropriate, conducting of a concert by an instrumental or vocal ensemble. In addition, both fields have a research requirement that serves in lieu of a thesis. In the field of choral music, 1 unit is given for the preparation and presentation of a one-hour program representative of a comprehensive repertory, and 4 units are devoted to the writing of a thesis.

Doctor of Philosophy in Musicology. The Ph.D. in musicology is intended for those whose interests lie in research in the history of music, systematic musicology, or ethnomusicology.

Admission. Prerequisites for admission are: (1) The M.Mus. degree in musicology from the University of Illinois at Urbana-Champaign, or an equivalent degree from another accredited institution. (2) A minimum of 32 semester hours in the liberal arts and sciences, normally including general history, philosophy, and literature.

Degree Requirements. A minimum of 16 units must be earned beyond the requirements for the master's degree including at least 2 units in the seminar in musicology. Although no formal outside minor is required, students are expected to take courses in fields outside music that are appropriate to the proposed area of thesis research. A preliminary examination is taken after all course work is completed.

Language Requirements. Proficiency is required in German and at least one other language, depending on the proposed field of specialization. This requirement can be satisfied by evidence of two years of undergraduate study, by completion of a two-semester 400-level reading course with a grade of at least B, or by satisfactory test scores.

Thesis. Eight of the total of 16 units are normally devoted to the writing of an original doctoral thesis.

MUSIC EDUCATION CURRICULA

Master of Science in Music Education. An applicant for admission must hold a bachelor's degree in music education with an admission average of at least 4.0. Candidates for this degree must earn a minimum of 4 units in music courses, 2 units in education courses, and 2 units of electives. One of the 4 units in music courses must be in music education. All students pursuing this degree must complete placement examinations in music history and theory and in their major performing medium during the registration period of their first term in residence. A thesis is not required. A full-time student can complete this program in one academic year or four summer sessions. The residence requirement may be fulfilled by one semester and one summer or by three summers of full-time study.

Advanced Certificate in Music Education. This program, designed to provide advanced professional preparation for music educators, requires a minimum of one year of graduate study beyond the master's degree.

Admission. A candidate for admission must hold a master's degree in music or music education and must have completed satisfactorily two years of professional employment in music education. During the student's first registration period, placement examinations are administered in music history, music theory, and applied music.

Program. A minimum of 8 units beyond the master's degree is required, including 1 unit in music education courses and 1 unit in educational psychology.

Doctor of Education in Music Education. This program, offered jointly by the School of Music and the College of Education, is designed to develop leaders in music education with a high level of musical, intellectual, and professional competence.

Admission. An applicant for admission must hold a master's degree with a major in music, music education, or a related academic discipline acceptable to the Graduate Committee for Music Education. Admission is determined by examinations in music history, music theory, music education, and applied music; personal interviews; record of previous education and experience; and recommendations from persons who have known the applicant. A report of the applicant's score on the Miller Analogies test should accompany his or her application for admission.

Program. At least 16 units of work beyond the master's degree are required, including 6 units in music courses and 6 units in education courses. No more than 2 units of credit in applied music may be counted toward the degree. A thesis is required. It may be in the area of improving professional practice and may be a field study. The residence requirement may be fulfilled by full-time study in two consecutive semesters or in one semester, a contiguous summer session, and one additional summer session.

Financial Aid. Fellowships, teaching and research assistantships, and tuition and service fee waivers are awarded on a one-year basis with continuation dependent upon success in the program. Specific information on application procedures is available from the Graduate Office, School of Music.

NUCLEAR ENGINEERING

Chairperson of the Program: George H. Miley
Associate Chairperson: Barclay G. Jones
Correspondence and Information: Nuclear Engineering Program, University of Illinios at Urbana-Champaign, 214 Nuclear Engineering Laboratory, 103 South Goodwin Avenue, Urbana, Illinois 61801

GRADUATE FACULTY

Professors: R. A. Axford, A. B. Chilton, J. J. Dorning, D. F. Hang, B. G. Jones, R. J. Martin, G. H. Miley, R. J. Turnbull, B. W. Wehring
Associate Professor: K. Kim
Assistant Professors: T. E. Blue, C. K. Choi, M. D. Devous, G. A. Gerdin, J. G. Gilligan, A. J. Machiels, M. Ragheb, J. F. Stubbins

Graduate Degree Programs. The Nuclear Engineering Program offers work leading to the Master of Science and Doctor of Philosophy degrees.

Admission. Admission to the M.S. and Ph.D. programs is open to all graduates in engineering, mathematics, and the physical sciences with an average grade of B or better for the last 60 hours of undergraduate work and any graduate work completed. Prerequisites for admission include a course in ordinary differential equations plus one other mathematics course beyond calculus; a course in atomic physics; a course in electrical circuit theory; a course in thermodynamics; and a course in fluid mechanics

or a course in continuum mechanics. A student may be admitted before completion of these prerequisites, but he or she must allow additional time for making up these deficiencies and such make-ups will not count toward the number of units required for the degree. Transcripts will be reviewed prior to admission, and letters of recommendation are requested plus other information such as rank in class as an undergraduate. If necessary to limit enrollments, admission will be restricted to those judged most worthy. International students must show good proficiency in English or be required to take courses in English as a second language.

Master of Science. The M.S. degree can usually be completed in two semesters and a summer session. Eight units of graduate work are required, including an M.S. thesis. The curriculum requires courses covering the fundamentals of nuclear engineering, plus two or more courses in an area of concentration chosen by the student in consultation with his or her adviser. Such areas include: nuclear materials, fusion systems and plasma engineering, energy conversion, radiation protection engineering, reactor physics and radiation transport, reactor thermal analysis and design, and reactor safety and nuclear power economics. At least six of the courses taken must be in the nuclear engineering area.

Doctor of Philosophy. Course requirements for the Ph.D. degree include at least two more semesters beyond that required for the M.S. degree. After this period, one or more years may be needed for the doctoral research and thesis. Students desiring to work toward the Ph.D. degree must pass the qualifying examination after receiving the M.S. degree (or after completing an equivalent number of units if not taking the M.S. degree). After completion of the additional course work, the candidate must pass the preliminary doctoral examination. After completion of the doctoral thesis, he or she must defend it successfully at the time of the final examination. A doctoral student would typically complete about twelve courses in nuclear engineering plus additional courses which support a specialized research area and provide background in mathematics and science. There is no foreign language requirement. Under exceptional circumstances, the doctoral research may be undertaken off campus.

Financial Aid. Fellowships and traineeships are generally available to support the best applicants, usually for a year. Other aid in the form of research assistantships and teaching assistantships is available for many if not most of the other graduate students. Other work of a professional nature can sometimes be found in the University or surrounding community. If the number of students is more than the program can assist financially, the support is distributed according to academic merit.

Research Interests. Faculty research interests cover a wide range including, but not limited to, reactor physics and engineering, radiation measurements, fusion and plasmas, nuclear thermal-hydraulics, nuclear safety, nuclear bioengineering, radiation transport phenomena, nuclear materials, and neutron activation.

Facilities. The Illinois Advanced TRIGA reactor is located on campus for research and teaching in nuclear engineering and operates at a steady state of power of 1.5 megawatts. The reactor can be pulsed to lower levels of 6,000 megawatts for special studies. Teaching facilities include a nuclear metallurgy laboratory; a radiochemistry and nuclear instrumentation laboratory; a heat transfer, fluid flow, and turbulence laboratory; several subcritical natural uranium assemblies; two neutron generators; a direct energy conversion laboratory; and a fusion studies laboratory.

NUTRITIONAL SCIENCES

Acting Director of the Division: JOHN A. MILNER

Correspondence and Information: Division of Nutritional Sciences, University of Illinois at Urbana-Champaign, 439 Bevier Hall, 905 South Goodwin Avenue, Urbana, Illinois 61801

GRADUATE FACULTY

Professors: D. H. Baker, J. H. Clark, C. L. Davis, R. M. Forbes, L. R. Hackler, P. V. Johnston, F. A. Kummerow, B. L. Larson, S. P. Mistry, R. A. Nelson, T. Nishida, E. G. Perkins, A. J. Siedler, E. Sleator, W. J. Visek, J. S. Willis
Associate Professors: L. A. Birch, R. A. Boileau, J. W. Erdman, Jr., G. C. Fahey, Jr., B. P. Klein, T. G. Lohman, J. A. Milner, W. D. O'Brien, M. F. Picciano, J. L. Robinson
Assistant Professors: B. H. Cho, M. A. Khan, D. K. Layman, R. L. Magin, M. R. Murphy, C. P. Ries, A. A. Salyers, A. R. Sherman

Graduate Programs. An interdepartmental graduate training program leading to the Master of Science and Doctor of Philosophy in Nutritional Sciences is offered. The degree requirements are designed to provide sufficient flexibility to enable students to pursue study in one of several areas of specialization within the broad field of the nutritional sciences. These specialties include experimental nutrition as it applies to microbes; animals, including man; nutritional biochemistry; and the chemistry of nutritional compounds. The program does not provide training in dietetics and community health.

Admission and Financial Aid. Applicants are expected to have an admission average of 4.0 (A = 5.0) for the last 60 hours of course work and basic courses in nutrition, chemistry, biology, and mathematics. Deficiencies in these subjects must be removed during the first year of graduate study. Financial assistance is available in the form of traineeships, assistantships, and fellowships. Applicants seeking August admission and expecting to be considered for financial assistance should file their applications before the preceding February 15th. Later applications will be considered depending on space and support available.

Master of Science. Requirements for the M.S. degree include courses in general biochemistry, two courses in advanced nutrition, and one semester of seminar. Additional courses are available in such diverse subjects as laboratory techniques in animal biochemistry, human and animal nutrition, food science, anthropology, sociology, and agricultural economics. The M.S. degree may be taken with or without a thesis. The minimum course work requirements in units for the M.S. are 8 (nonthesis) and 6 (plus at least 2 units of thesis credit).

Doctor of Philosophy. In addition to maintaining a 4.0 (A = 5.0) average in formal course work, Ph.D. students are required to take a qualifying examination, an oral preliminary examination, and a final thesis examination. There is no foreign language requirement, but students whose native language is not English are required to have competence in English. A minimum of 24 units of credit work beyond the baccalaureate degree is required.

PHILOSOPHY

Chairperson of the Department: R. L. Schacht
Correspondence and Information: Director of Graduate Studies, Department of Philosophy, University of Illinois at Urbana-Champaign, 105 Gregory Hall, 810 South Wright Street, Urbana, Illinois 61801

GRADUATE FACULTY

Professors: C. E. Caton, B. J. Diggs, R. L. Schacht, D. S. Shwayder, H. M. Tiebout, J. D. Wallace, F. L. Will
Associate Professors: H. S. Chandler, A. Melnick, W. Neely
Assistant Professors: D. A. Bantz, R. L. Fern, R. D. Mohr, J. T. Rabinowitz, F. F. Schmitt, W. R. Schroeder, S. J. Wagner, R. G. Wengert

Graduate Degree Programs. The normal program of graduate study for philosophy majors is directed toward the Doctor of Philosophy, but students who wish to work for only the Master of Arts are also admitted. Graduate students majoring in other fields, who wish to offer philosophy as a minor or to include philosophy in their programs in a less formal way, are encouraged to consult with members of the graduate faculty in philosophy in order to plan appropriate courses of study.

Admission. The Graduate College admission requirements apply. In addition, applicants should have had a course in elementary logic, a course in the theory of knowledge, a course in ethics, and a general course in the history of philosophy (the main figures of ancient and modern philosophy). Students deficient in one or more of these areas may be admitted, with deficiencies to be removed by taking courses recommended by the departmental director of graduate studies after consultation with the student.

All applications for admission must be supported by three letters of recommendation. The letters should be from persons qualified to speak of the candidate's aptitude for graduate study in philosophy. Candidates are asked to have these letters transmitted directly to the committee on admissions and financial aid of the Department of Philosophy. All applicants for admission should take the general aptitude portion of the Graduate Record Examination and have their scores transmitted to the department. They also are urged to submit samples of their written work.

Master of Arts. The A.M. degree requires at least 8 units of graduate credit with at least a 4.0 grade-point average (A = 5.0). There are two ways in which this degree may be earned. A qualifying student who has passed the preliminary examination for the Ph.D. automatically meets the department's requirements for the A.M. degree. The degree may also be earned by completing one full year of residence study in philosophy at the University of Illinois at Urbana-Champaign and by earning a minimum of 8 units (at least 6 of which must be in regular courses), submitting a substantial essay, and passing an oral examination on the essay given by a committee appointed by the chairperson of the department. A degree earned in this second way is normally a terminal one.

Doctor of Philosophy. The Ph.D. degree requires 16 units of graduate credit beyond the 8 required for the master's degree. Eight of these may be thesis research credit. A minimum grade-point average of 4.0 is required for this degree.

Candidates need not take work in a minor field outside the department. In cases in which advanced study in philosophy would be strengthened by study in a related field, students may include such related course work to satisfy requirements for the degree. Such study is limited to 2 units. If the student wishes the work to count as an extra departmental minor, then the minimum accepted is 2 units and the maximum 4 units.

In the preliminary examination required of all candidates, each student is to demonstrate a basic competence in the four broad areas of philosophy: history of philosophy, theory of knowledge, metaphysics, and ethics and value theory.

Before the Department of Philosophy will certify that a student has passed the preliminary examination, the student must demonstrate either (a) a basic reading knowledge of two of the following languages: German, French, Greek, or Latin; or (b) a high proficiency in one of these languages (deviations from this policy require the approval of the chairperson of the department). In addition, the student must demonstrate a basic competence in symbolic logic. The logic requirement may be met by passing an approved course in the subject or by passing a proficiency examination administered by the department.

After passing the preliminary examination, the student must submit an acceptable thesis and pass a final examination on the thesis. The acceptability of the thesis is judged and the final examination administered by the student's doctoral committee.

Concentration in the Area of History and Philosophy of Science. The Departments of History and Philosophy jointly offer a special area of concentration in history and philosophy of science for work toward the A.M. and the Ph.D. degrees. Students interested in this program will enroll in and receive their degrees from either depart-

ment, depending on the focus of their interests. Undergraduate background requirements for admission to the program are flexible. Although an undergraduate concentration in either history or philosophy is normally desirable, so also is a strong background in science, and students with such background and only weak training in history or philosophy will be considered for admission. The course requirements for admission to the Department of Philosophy and the means of remedying deficiencies in undergraduate training in that department are not applicable to students applying to this program. All other admission requirements are the same as those of each of the two departments, as is the information to be submitted with each application for admission. The exact requirements for degrees in this concentration, including the preliminary examination, are somewhat different and more flexible than those for the advanced degrees in philosophy. Further information is available from the Department of Philosophy.

Financial Aid. Financial aid is available for many students in the form of fellowships, assistantships, and waivers of tuition and service fees.

PHYSICAL EDUCATION

Head of the Department: Rollin G. Wright

Correspondence and Information: Director, Graduate Studies Program Office, Department of Physical Education, University of Illinois at Urbana-Champaign, 210A Freer Gymnasium, 906 South Goodwin Avenue, Urbana, Illinois 61801

GRADUATE FACULTY

Professors: A. T. Cheska, J. W. Loy, G. Lueschen, R. Martens, B. H. Massey, D. O. Matthews, M. Thompson, R. G. Wright

Associate Professors: R. A. Boileau, C. J. Dillman, S. Greendorfer, T. Lohman, A. Morris, K. M. Newell, G. C. Roberts, M. Slaughter, M. Souder

Assistant Professors: G. W. Bell, J. Groppel, L. Lussier, J. Taylor, T. Ward

Graduate Degree Programs. The Department of Physical Education offers graduate work leading to the degrees of Master of Science in the Teaching of Physical Education, Master of Science, and Doctor of Philosophy. Each of these is an individualized program of graduate study designed to develop outstanding educators, scholars, and researchers in physical education.

Master of Science in the Teaching of Physical Education. Admission to this degree program requires a baccalaureate degree from an accredited institution of higher education, a minimum grade-point average of 4.0 (A = 5.0) for the last 60 hours of undergraduate work and any graduate work completed, eligibility for teacher certification in the state of Illinois, acceptable scores on the aptitude portions of the Graduate Record Examination, and three letters of recommendation. This degree program is designed for individuals who wish to advance their teaching competencies. Candidates for this degree must complete a minimum of 8 units, 4 of which must be in physical education and 2 in education courses. Three of the total units must be in 400-level courses. Of the 4 units in physical education, Physical Education 495 (Techniques of Research in Health, Physical Education, and Recreation) or an equivalent graduate-level research methods course appropriate to a student's program of study is required. Information concerning the specific requirements of the 2 units in education may be obtained from the graduate studies office of the department. At least one-half of the minimum units required for this degree must be in courses meeting on the Urbana-Champaign campus. It is possible for a full-time student to complete this degree program in one academic year plus one summer session. A thesis is not required.

Master of Science. Admission to this degree program requires a baccalaureate degree from an accredited institution of higher education, a minimum grade-point

average of 4.0 (A = 5.0) for the last 60 hours of undergraduate work and any graduate work completed, acceptable scores on the aptitude portions of the Graduate Record Examination, and three letters of recommendation. This degree program is designed for those individuals desiring to study a particular area of interest in depth. Candidates for this degree must complete a minimum of 8 units, 4 of which must be in physical education courses and 2 in a discipline other than physical education. Three of the total units must be in 400-level courses. Of the 4 units in physical education, Physical Education 495 (Techniques of Research in Health, Physical Education, and Recreation) or an equivalent graduate-level research methods course appropriate to a student's program of study is required. At least one-half of the minimum units must be in courses meeting on the Urbana-Champaign campus. It is possible for a full-time student to complete this degree program in one academic year plus one summer session. A student may choose to write an acceptable thesis for 2 units of credit (i.e., Physical Education 499); or a student may select a nonthesis option by substituting 2 units of approved credit of Physical Education 493 (Independent Study), and/or Physical Education 494 (Special Topics in Physical Education).

Doctor of Philosophy. Admission to this degree program requires a master's degree from an accredited institution of higher education, completion of a thesis or equivalent research experience, a minimum grade-point average of 4.5 (A = 5.0) for all graduate work, acceptable scores on the Miller Analogies Test and aptitude portions of the Graduate Record Examination, and three letters of recommendation. Doctor of Philosophy degree candidates pursue an advanced program of study and research in preparation for careers in scholarly research and teaching. Candidates must complete 16 units of work beyond the master's degree, including 4 units in another discipline and 8 units of thesis research. Major areas of faculty research and particular specializations include: (1) bioscience of physical activity (physiology of fitness/human performance and sports medicine), (2) social science of sport (sport psychology and sport sociology), (3) human movement studies (biomechanics and motor learning), (4) administrative and curriculum studies (including professional preparation and program design, development, and evaluation). Where deemed appropriate for a given student's particular program of study, Ph.D. candidates may be requested to demonstrate the ability to translate or to read, write, and converse satisfactorily in a specific foreign language. Ph.D. candidates must also successfully complete the preliminary and final doctoral examinations.

Research Facilities. In support of its graduate programs and research efforts, the Department of Physical Education maintains several research facilities, including the Biomechanics Research Laboratory, the Motor Behavior Research Laboratory, the Physical Fitness Research Laboratory, Therapeutic Exercise Research, and a PDP 11/03 computer facility.

Financial Aid. A number of teaching assistantships are available in the department's instructional programs; priority is given to applicants with professional teaching experience. A limited number of research assistantships are available to support the departmental research laboratories. Assistantships normally provide a stipend for services performed, as well as a waiver of tuition and service fees.

PHYSICAL SCIENCES

Correspondence and Information: D. H. Secrest, University of Illinois at Urbana-Champaign, 155 Noyes Laboratory, 505 South Mathews Avenue, Urbana, Illinois 61801

Graduate Degree Programs. Two degree programs in physical sciences, one leading to the Master of Science and the other leading to the Master of Science in the Teaching of Physical Sciences, are offered for active or potential secondary school teachers. In both programs, the requirements for teacher certification must be met. A thesis is

optional. No more than 2 units of thesis credit may be applied toward degree requirements. There is no language requirement. At least 3 units of credit applied to these degrees must be at the 400 level.

Master of Science. This program is designed to meet the needs of teachers who wish to get a broad view of the physical sciences rather than to specialize in one department. Since the program is designed primarily for those preparing to teach the physical sciences, chemistry and physics are emphasized. Students working toward degrees under the provisions of this program are expected to seek approximately equal proficiency in both physics and chemistry; those whose undergraduate work has emphasized chemistry should balance this by weighting the graduate work in favor of physics, and vice versa.

All courses in astronomy, chemistry, computer science, geology, mathematics, and physics which normally may be applied for graduate credit are acceptable toward the degree. To qualify for the degree, a student must present at least one course in mathematics beyond calculus for which calculus is a prerequisite.

Master of Science in the Teaching of the Physical Sciences. Students in this program must earn 4 units in the physical sciences, 2 units in education (see page 91), and 2 units of electives in education or physical science, or, in exceptional cases, in other fields.

PHYSICS

Head of the Department: R. O. Simmons

Correspondence and Information: Graduate Advising Office, Department of Physics, University of Illinois at Urbana-Champaign, 215 Loomis Laboratory of Physics, 1110 West Green Street, Urbana, Illinois 61801

GRADUATE FACULTY

Professors: D. Alpert, A. C. Anderson, G. Ascoli, P. Axel, G. A. Baym, S. A. Bowhill, F. C. Brown, R. M. Brown, M. K. Brussel, J. H. Cahn, S.-J. Chang, P. G. Debrunner, J. D. Dow, H. G. Drickamer, G. Ehrlich, B. I. Eisenstein, C. P. Flynn, H. Frauenfelder, D. M. Ginsberg, E. L. Goldwasser, A. V. Granato, P. Handler, A. O. Hanson, L. E. Holloway, N. Holonyak, J. P. Hummerl, I. Iben, E. A. Jackson, L. M. Jones, M. V. Klein, L. J. Koester, J. Kogut, U. E. Kruse, A. B. Kunz, F. K. Lamb, D. Lazarus, M.-K. Mak, D. E. Mapother, W. L. McMillan, J. M. Mochel, Y. Ogura, T. A. O'Halloran, V. R. Pandharipande, C. J. Pethick, D. Pines, F. M. Propst, M. J. Raether, D. G. Ravenhall, C. T. Sah, M. B. Salamon, R. D. Sard, R. O. Simmons, C. P. Slichter, J. H. Smith, J. N. Snyder, H. J. Stapleton, J. D. Sullivan, J. W. Truran, W. D. Watson, A. Wattenberg, W. S. Williams, J. P. Wolfe, M. Wortis, J. A. Wright, H. W. Wyld

Associate Professors: L. S. Cardman, P. T. Debevec, L. B. Eisenstein, G. E. Gladding, T. C. Mouschovias, A. M. Nathan, M. H. Nayfeh, R. L. Schult, B. A. Sherwood, L. L. Smarr, J. D. Stack, D. C. Sutton, J. J. Thaler

Assistant Professors: T. C. Chiang, E. H. Franklin, E. Gratton, Y. Oono, M. Stone, D. J. Van Harlingen, M. B. Weissman, J. E. Wiss, H. Zabel

Graduate Degree Programs. The Department of Physics offers graduate work leading to the Master of Science and the Doctor of Philosophy. There is opportunity for experimental or theoretical specialization in nuclear physics; elementary particle physics; nuclear magnetic and electron spin resonance; astrophysics; the physics of solids, including research on ionic crystals, metals, semiconductors, superconductors, biomolecular, and surface physics; the properties of liquid helium; laser spectroscopy of atoms; and plasma physics. Graduate study in atmospheric physics, aeronomy, and in several areas of applied physics is available in conjunction with other departments in the University.

Admission. Requirements for admission to the graduate program in physics, in addition to those of the Graduate College, are 20 hours of physics, excluding courses in general physics and including a semester of intermediate theoretical mechanics, and two semesters of intermediate electricity and magnetism or the equivalent. Advanced undergraduate courses in light, thermodynamics, and atomic and quantum physics, and undergraduate study of a foreign language are strongly recommended. Students whose undergraduate training in physics is deficient in one or more basic areas are often admitted on limited standing with deficiencies to be removed during the first year of graduate study.

Master of Science. This program requires 8 units of graduate courses and is usually completed in one year of full-time study by students entering on full standing. Students entering with deficiencies may require up to two years to complete the degree requirements. Precise statements of degree requirements may be obtained from the graduate advising office of the Department of Physics.

Doctor of Philosophy. Students working for the Ph.D. degree usually require from four to six years to complete the requirements. Students admitted with full standing are expected to pass the qualifying examinations within the first eighteen months of residence and the preliminary examinations within the following eighteen months. Departmental requirements for the Doctor of Philosophy, in addition to the general requirements of the Graduate College, are described in a pamphlet which may be obtained from the graduate advising office of the Department of Physics.

Related Programs. For information concerning applications of mathematics to the physical sciences, see page 135; for information concerning astronomy, see page 71; for information concerning atmospheric sciences, see page 73; for information concerning biophysics, see page 131; for information concerning geophysics, see page 107. A doctoral program in chemical physics is described on page 77.

PLANT PATHOLOGY

Head of the Department: Richard E. Ford

Correspondence and Information: Head of the Department of Plant Pathology, University of Illinois at Urbana-Champaign, N519 Turner Hall, 1102 South Goodwin Avenue, Urbana, Illinois 61801

GRADUATE FACULTY

Professors: R. E. Ford, R. M. Goodman, D. Gottlieb, E. B. Himelick, R. D. Neely, P. D. Shaw, M. C. Shurtleff, J. B. Sinclair

Associate Professors: J. L. Crane, D. I. Edwards, L. E. Gray, M. E. Irwin, B. J. Jacobsen, H. Jedlinski, R. B. Malek, J. D. Paxton, D. F. Schoeneweiss, D. G. White

Assistant Professors: C. J. D'Arcy, D. A. Glawe, E. G. Jordan, H. W. Kirby, G. R. Noel, W. L. Pedersen

Graduate Degree Programs. The Department of Plant Pathology offers a full complement of courses and study leading to the Master of Science and Doctor of Philosophy degrees. All students are required to present themselves for an oral examination in plant pathology before their program-of-study committee after the first semester of graduate study.

Training consists of a flexible program of courses and research in plant pathology and allied sciences. Areas of specialization are diseases of field, fruit, vegetable, turf, tree, or ornamental crops; virology; nematology; mycology; phytobacteriology; fungicides; antibiotics; physiology of fungi; biochemistry of plant diseases; disease resistance; etiology; epiphytology; soil-borne diseases; and variability in plant pathogens.

Admission. Applicants for graduate study are screened by a departmental admissions committee. The Graduate College admission requirements apply except a 4.0 grade-point average is the minimum acceptable.

Master of Science. A candidate for the Master of Science must complete 8 units of credit, including the presentation of an acceptable thesis, and pass an oral examination. Three units must be in 400-level courses, and 2 of the 3 must be in the major field. Limited credit in equivalent courses earned at other institutions may be accepted at the discretion of the department head and the student's program-of-study committee. The candidate must maintain an average of 4.0 (A = 5.0) for the master's program.

Doctor of Philosophy. Students working toward the Ph.D. degree usually require three to four additional years beyond the master's. Eight units of course work, including required courses, must be completed beyond the master's degree to qualify for the preliminary examination. An oral preliminary examination before five faculty members, including at least three within and one from outside the department, is required. A final examination by the same committee follows the presentation of an acceptable thesis. A grade-point average of at least 4.0 is required for the Ph.D. degree.

POLITICAL SCIENCE

Head of the Department: Richard L. Merritt

Correspondence and Information: Department of Political Science, University of Illinois at Urbana-Champaign, 361 Lincoln Hall, 702 South Wright Street, Urbana, Illinois 61801

GRADUATE FACULTY

Professors: J. D. Casper, S. P. Cohen, M. Davis, B. Glad, S. K. Gove, R. E. Kanet, E. A. Kolodziej, R. L. Merritt, P. Monypenny, S. S. Nagel, G. A. Orfield, R. E. Scott, L. G. Seligman, F. M. Wirt, G. T. Yu, D. A. Zinnes

Associate Professors: P. G. Bock, I. H. Carmen, B. Carroll, S. A. Douglas, A. B. Fields, M. Hobbs, P. F. Nardulli, M. B. Preston, S. T. Seitz, M. G. Weinbaum, M. E. Weinstein, R. Weissberg

Assistant Professors: K. M. Benedict, P. A. Heilig

Graduate Degree Programs. The Department of Political Science offers graduate work leading to the degrees of Master of Arts and Doctor of Philosophy. Graduate work is conducted in the following special fields: American government and politics, comparative government and politics, international law and relations, political behavior, political theory, and public policy.

Admission. The Graduate College admission requirements apply for all programs. The student should have had a minimum of 20 hours of undergraduate work in political science, economics, finance, psychology, sociology, or history, not less than 12 hours of which should have been in political science, and may include 3 hours in constitutional history. All applicants are required to submit Graduate Record Examination scores and applicants with prior graduate work are required to submit an example of their written material. The minimum TOEFL score for foreign applicants is 590.

Master of Arts. Requirements for the master's degree include 8 units of credit and an acceptable thesis or a substantial research essay in a departmental course.

Master of Arts in Public Administration. Requirements for the M.A.P.A. degree include 7 units of course work and 2 units of thesis research. See Public Administration for further details.

Doctor of Philosophy. Students planning to continue toward the doctorate must be admitted to candidacy. Such students should apply for admission to candidacy in

their fourth semester of graduate training. The A.M. degree is not a prerequisite to working toward the doctorate, but admission to candidacy is.

A doctoral candidate must show familiarity with all the fields of the discipline by successfully completing one course in four of the six areas. Competence must be demonstrated either in foreign languages, in quantitative methods and analysis, or in a combination of these as appropriate to the candidate's research interests. Requirements also include passing written and oral preliminary examinations after completion of 16 units beyond the bachelor's degree. The preliminary examinations test competence in a major area of political science and in two minor areas, one of which may be outside the department. Although teaching is not a general Graduate College requirement, this department requires Ph.D. candidates to do some teaching as part of their academic work, such experience being considered a vital part of the graduate program. Further information on all these programs may be obtained by writing directly to the department.

Financial Aid. A majority of first-year, as well as continuing, graduate students receive financial assistance from one of several sources. The department has a number of endowed fellowships; these, along with University Fellowships, provide a stipend for at least nine months plus a waiver of tuition and service fees. Departmental teaching and research assistantships provide a nine-month salary and a waiver of tuition and service fees. Several tuition and service fee waivers are also available.

POPULATION STUDIES

Correspondence and Information: Robert Schoen, Chairperson, Population Studies Committee, University of Illinois at Urbana-Champaign, 326 Lincoln Hall, 702 South Wright Street, Urbana, Illinois 61801

The study of the world's population, its size, rate of growth, and movement, is a major intellectual concern involving students and faculty members from a wide range of academic departments of the University of Illinois at Urbana-Champaign. Communication and coordination among these various research and teaching interests are facilitated by the Population Studies Committee. In addition to the opportunities for graduate-level research and instruction which exist for students in graduate units as diverse as Agriculture, Life Sciences, Urban and Regional Planning, Communications, History, and Business Administration, the Department of Sociology offers an interdisciplinary graduate program in population studies designed to train professional demographers for academic, government, and industrial positions. Faculty members from the Departments of Economics and Geography, as well as Sociology, are involved in the program. Applicants seeking a formal specialization in demography should apply for admission to the graduate program in sociology, indicating their interest in population studies.

PSYCHOLOGY

Head of the Department: Emanuel Donchin

Correspondence and Information: Graduate Admissions and Records Office, Department of Psychology, University of Illinois at Urbana-Champaign, 337 Psychology Building, 603 East Daniel Street, Champaign, Illinois 61820

GRADUATE FACULTY

Professors: J. A. Adams, P. Arabie, D. A. Bernstein, D. Birch, J. Campione, G. L. Clore, J. B. Cohen, F. Costin, J. H. Davis, E. Donchin, D. E. Dulany, C. W. Eriksen, M. Fishbein, J. Gottman, W. T. Greenough, H. W. Hake, J. Hirsch,

C. O. Hopkins, C. L. Hulin, L. G. Humphreys, F. Kanfer, S. Komorita, P. R. Laughlin, J. E. McGrath, D. Medin, C. E. Osgood, R. D. Parke, J. Rappaport, E. Satinoff, E. Seidman, P. Teitelbaum, H. C. Triandis, M. Weir, R. Wyer

Associate Professors: M. Birnbaum, W. Brewer, S. Carter-Porges, M. Coles, E. Diener, S. Golding, G. Z. Greenberg, R. Hendersen, L. E. Jones, E. Newport, S. Porges, W. Redd, D. T. Shannon, E. J. Shoben, C. Trahiotis, C. Wickens

Assistant Professors: F. Drasgow, B. Hirsch, J. Lamiell, R. Lewine, A. Lind, J. Malpeli, C. Mervis, D. Phillips, B. Ross, E. Roy, W. Schneider, T. Srull

Graduate Degree Programs. The Department of Psychology offers graduate work leading to the degrees of Master of Arts, Master of Science, and Doctor of Philosophy.

Doctor of Philosophy programs are offered in the following areas of psychology: biological, developmental, clinical, measurement, personality and social ecology, and social/organizational individual differences. The Master of Arts degree is awarded to students in the above programs as an intermediate degree. Master of Science programs are offered as terminal degrees in personnel psychology, engineering psychology, and measurement psychology.

Admission. The Graduate College admission requirements apply for all programs. The candidate for admission to a Master of Arts or Doctor of Philosophy program should ordinarily have the following preparation: a minimum of 15 hours in psychology, a laboratory course in experimental psychology, a course in statistics, a one-year course in another laboratory science, and high scores on the Graduate Record Examination. Preference is given to students who have taken mathematics beyond college algebra and to those who have some research experience. Applications for admission to part-time study are usually not approved.

Master of Arts. The Master of Arts degree is awarded as an intermediate degree to students who are candidates for the Doctor of Philosophy degree when they have completed satisfactorily 8 units of graduate work, including an acceptable thesis.

Master of Science. The Master of Science degree in personnel psychology, in engineering psychology, or in applied measurement is awarded as a terminal degree to candidates who have had an appropriate applied psychology undergraduate program and who now complete satisfactorily 8 prescribed graduate units in their specialty.

Doctor of Philosophy. The Doctor of Philosophy degree is awarded to candidates who complete an approved program in their areas of specialization and meet departmental and Graduate College requirements for the degree. These must include: at least 24 graduate units beyond the bachelor's degree; satisfactory performance in courses or examinations dealing with quantitative methods, conceptual foundations of psychology, and chosen areas of specialization; a master's thesis or equivalent; appropriate advanced courses and seminars in the area of specialization and in related and supporting areas; satisfactory performance on a doctoral qualifying examination; satisfactory performance on an oral preliminary examination; and completion of an acceptable Ph.D. thesis and satisfactory performance on an oral examination in defense of the thesis.

Doctor of Psychology. The Doctor of Psychology degree has been suspended. Students currently enrolled will complete the program, but no new candidates are being admitted.

Although teaching is not a general Graduate College requirement, this department requires Ph.D. candidates to do some teaching as part of their academic work, such experience being considered a vital part of the graduate program. This usually takes the form of a teaching assistantship for at least one semester.

Medical Scholars Program. This program allows the student interested in medicine and psychology to earn both the M.D. and Ph.D. (in psychology) degrees while gaining unique multidisciplinary research experience and expertise.

Individually tailored programs of study can be developed within the general requirements of medical training and graduate study in psychology. Degree work will

be arranged to accommodate the scheduling requirements of both programs, but the course of study in psychology will be equivalent to that of all other doctoral candidates. More details about the Medical Scholars Program are available from Associate Dean for Academic Affairs, Schools of Basic Medical Sciences and Clinical Medicine, University of Illinois at Urbana-Champaign, 190 Medical Sciences Building, 506 South Mathews Avenue, Urbana, Illinois 61801.

PUBLIC ADMINISTRATION

Correspondence and Information: James D. Nowlan, Director, Public Administration Program, Department of Political Science, University of Illinois at Urbana-Champaign, 361 Lincoln Hall, 702 South Wright Street, Urbana, Illinois 61801

Graduate Degree Program. The graduate program in public administration educates and prepares students for leadership and public management roles in national, state, and local government, as well as in public affairs for nongovernmental organizations. The program emphasizes the importance of a mix of administration, management, and policy courses across several disciplines. Courses may be taken in the areas of political science, economics, labor and industrial relations, business administration, accounting, education, finance, law, psychology, and urban and regional planning, as well as other related areas. The relatively small number of students admitted allows for close working relationships with faculty members.

The Master of Arts in Public Administration. The M.A.P.A. degree requires a minimum of 7 course units, a thesis (2 units), and an internship in government service for at least three months. A joint program with the College of Law allows students in public administration to earn both the M.A.P.A. and J.D. degrees in three-and-one-half years. A proposed joint program with the Department of Business Administration would provide an 18-unit, two-and-a-half–year program to earn both the M.A.P.A. and M.B.A. degrees. Further options for students include a municipal management track with specialization in city management and a concentration in criminal justice processes and institutions.

RADIO AND TELEVISION

Acting Head of the Department: James W. Carey

Correspondence and Information: Department of Radio and Television, University of Illinois at Urbana-Champaign, 119 Gregory Hall, 810 South Wright Street, Urbana, Illinois 61801

The Department of Radio and Television has suspended admission to its program leading to the Master of Science degree while it reviews the curriculum and decides on its plans for future instruction in broadcasting. Students interested in earning a master's degree in radio and television may write to the department head to learn the status of the department's plans. For the program leading to the Doctor of Philosophy in Communications, see page 84.

REGIONAL SCIENCE PROGRAM

Correspondence and Information: Regional Science Program, University of Illinois at Urbana-Champaign, 107-109 Observatory, 901 South Mathews Avenue, Urbana, Illinois 61801

Program Committee: D. E. Boyce (chairperson), P. F. Colwell, B. B. Ewing, A. Getis, G. J. D. Hewings, L. D. Hopkins, M. C. Romanos, H. F. Williamson

Graduate Degree Programs. An interdisciplinary concentration in regional science is available for students enrolled in master's or doctoral degree programs in the following departments: Civil Engineering, Economics, Finance, Geography, Landscape Architecture, or Urban and Regional Planning. Program concentration varies by department and includes emphasis in transportation planning, regional development and planning, real estate and urban land economics, urban and regional analysis, and environmental systems and management. Core courses are taken in regional and social science theory, location theory, and methods of regional analysis. The specific core courses taken will depend upon background and major department. Further specialization may be pursued by making approved selections from among a rich array of more than forty regional science courses in the participating departments.

Admission. Prospective students should address inquiries to the program office. Applicants desiring a major or minor emphasis in regional science should seek admission to one of the cooperating departments. All degree candidates must complete the requirements of the department in which they enroll. Students specializing in regional science are expected to have a sound background in economics, statistics, and mathematics. Deficiencies in these subjects must be removed during the first year of graduate study.

RELIGIOUS STUDIES

Director of the Program: David L. Petersen
Correspondence and Information: Program in Religious Studies, University of Illinois at Urbana-Champaign, 4016 Foreign Languages Building, 707 South Mathews Avenue, Urbana, Illinois 61801

The Program of Religious Studies, one of thirteen units in the School of Humanities, is responsible for sponsoring teaching, research, and public service in the area of religious studies. Although the program does not itself offer graduate degrees, its seven core faculty members, as well as its fourteen associated faculty members, regularly teach graduate-level courses and serve on thesis committees for other departments. Students interested in pursuing graduate work in religious studies should contact the director of the program to determine how they can best pursue their interests.

ROMANCE LINGUISTICS

Graduate Degree Programs. A concentration in Romance linguistics is available to candidates for the Doctor of Philosophy in the Departments of French; Linguistics; and Spanish, Italian, and Portuguese. The curriculum is based upon appropriate course offerings in the three departments. Further information may be obtained from the executive officers of those departments.

RUSSIAN LANGUAGE AND AREA STUDIES

Director of the Russian and East European Center: R. T. Fisher, Jr.
Correspondence and Information: Director of the Russian and East European Center,

University of Illinois at Urbana-Champaign, 1208 West California Avenue, Urbana, Illinois 61801

GRADUATE FACULTY

Professors: P. P. Bernard, W. C. Blaylock, C. L. Dawson, F. Dovring, J. D. Fellmann, R. T. Fisher, Jr., M. Friedberg, J. Gorecki, F. M. Gottheil, K. A. Hitchins, D. R. Hodgman, R. E. Kanet, M. J. Kenstowicz, P. B. Maggs, J. P. McKay, J. R. Millar, L. H. Miller, B. Nettl, J. A. Nichols, T. Pachmuss, D. L. Ransel, A. L. Ringer, P. W. Schroeder, D. B. Shimkin, L. Zgusta

Associate Professors: E. C. Bristol, M. T. Choldin, S. Curcic, R. Dunatov, F. Y. Gladney, S. P. Hill, H. H. Hock, M. M. Shorish, B. P. Uroff

Assistant Professors: M. H. Berry, H. P. Maguire, N. Rzhevsky

Graduate Degree Programs. Graduate programs in Russian language and area studies are offered by the Russian and East European Center in cooperation with various departments. The three programs listed below are designed to accompany work in a standard discipline such as anthropology or economics. Accordingly, it is the department of the student's primary discipline which receives and acts on the application for admission.

Minor for the Master's Degree. A candidate for the master's degree who elects Russian language and area studies as a minor must earn at least 2 units of graduate credit in courses devoted to Russia and chosen from the fields of anthropology, economics, geography, history, law, library science, literature, political science, and sociology.

Minor for the Doctor of Philosophy Degree. A doctoral candidate who elects Russian language and area studies as a minor must demonstrate a reading command of Russian as tested by examination or by completion of Russian 104 or 401 with a grade of A or B, and, in addition, must earn at least 4 units of graduate credit in the group of relevant courses defined above. The 4 units must include courses from at least two departments outside of, and may at the same time include up to 1 unit from within, the department offering the candidate's major.

Certificate of Graduate Specialization in Russian Language and Area Studies. This certificate is awarded by the Graduate College and the Russian and East European Center. It is for persons with the baccalaureate who are enrolled in advanced studies in any discipline and who wish at the same time to gain a knowledge of the Russian language and area. The requirements are as follows: (1) A good command of written and spoken Russian, as determined by special examinations. (2) At least 6 graduate units in course work relating to Russia, distributed among at least three of the departments represented in the program (Anthropology, Economics, Geography, History, Law, Library and Information Science, Political Science, Slavic Languages and Literatures, and Sociology) other than the student's own major department. If the student's major department is one of these nine, up to 1 unit from the major department may be counted as part of this requirement. (3) A special essay based largely on Russian sources which must meet, at the minimum, the standard normally required in a master's thesis. A copy of the student's master's or doctoral thesis may be submitted in fulfillment of this requirement.

SLAVIC LANGUAGES AND LITERATURES

(Including Czech, Old Church Slavonic, Polish, Russian, Serbo-Croatian, and Ukrainian)

Head of the Department: Maurice Friedberg

Correspondence and Information: Department of Slavic Languages and Literatures, University of Illinois at Urbana-Champaign, 2090 Foreign Languages Building, 707 South Mathews Avenue, Urbana, Illinois 61801

GRADUATE FACULTY

Professors: C. L. Dawson, M. Friedberg, M. J. Kenstowicz, T. Pachmuss
Associate Professors: E. Bristol, R. Dunatov, F. Y. Gladney, S. P. Hill
Assistant Professor: N. Rzhevsky

Graduate Degree Programs. The Department of Slavic Languages and Literatures offers graduate work leading to the degrees of Master of Arts in Russian, Master of Arts in the Teaching of Russian, and Doctor of Philosophy with specialization in Russian literature or Slavic linguistics.

Admission. Prospective graduate students of Slavic languages and literatures should have had the equivalent of at least three years of college Russian and some advanced course work in Russian literature. Some acquaintance with other languages and literatures is desirable. Students choosing Russian or other Slavic languages and literatures as a minor subject should consult the department. The Graduate College admission requirements apply.

Master of Arts in Russian. In addition to fulfilling the requirements of the Graduate College, candidates must pass both a written and an oral examination in their major and must pass the Russian proficiency examination. Students may specialize in literature or linguistics. All students must complete a departmental core program comprised of courses in literature and linguistics. No master's thesis is required.

Master of Arts in the Teaching of Russian. All candidates for this degree are required to take: (1) Russian, 5 units including at least 2 units from courses open only to graduate students; (2) education, 2 units including 1 unit in educational psychology and 1 unit in educational policy studies; and (3) electives, 1 unit. These courses must be selected with the approval of the adviser. Candidates must pass an examination based on their course work and on a reading list. See page 92 for teacher certification requirements.

Doctor of Philosophy. All candidates for the Ph.D. must fulfill the general requirements of the Graduate College and must have a reading knowledge of two non-Slavic languages, ordinarily French and German. A student may choose literature or linguistics as a major field. In addition to satisfying departmental language proficiency requirements, students must complete 8 units of course work beyond the A.M. degree, of which at least 5 are within the student's major field of study. The student must also complete a minor consisting of three graduate-level courses in a single field or two such courses each in two fields. Possible minor fields include Russian literature, Slavic linguistics, another Slavic language or literature, or an acceptable subject area outside the department. A student with a double minor may elect to be examined in only one minor. Students majoring in Russian literature must complete two graduate-level courses in another Slavic language or literature in the original language. Students majoring in Slavic linguistics must complete a minimum of three graduate-level courses in two other Slavic languages or literatures in the original languages. A thesis is required for the degree of Doctor of Philosophy.

Graduate courses are offered in the following Slavic languages: Czech, Old Church Slavonic, Polish, Russian, Serbo-Croatian, and Ukrainian.

Financial Aid. Several forms of financial assistance, including University Fellowships, Foreign Language and Area Studies (Title VI) fellowships, teaching assistantships, research assistantships, and tuition and service fee waivers are available. There are also opportunities for part-time related work in the Slavic and East European Division of the University Library and elsewhere on the campus. Virtually all superior students are assured of some form of financial assistance and also receive the opportunity to acquire some classroom teaching experience.

Research Interests. Major areas include East, West, and South Slavic linguistics; language teaching pedagogy; and computer-assisted language teaching. In literature, the fields of specialization include Russian literature of all periods, particularly of the nineteenth and twentieth centuries, Russian literature and society, émigré Russian

literature, the Russian romantic and symbolist poets, Russo-Western literary and cultural contacts, and Russo-Jewish literary relations. Other major areas of interest represented include the Soviet and East European cinema, literary translation, Polish literature, Serbo-Croatian literature, and Slavic folklore.

The University of Illinois at Urbana-Champaign has one of the country's two or three outstanding Slavic library collections. The Illinois Summer Research Laboratory on Russia and Eastern Europe brings to the campus more than one hundred postdoctoral researchers from all over the country every year to take advantage of the Slavic library resources. The library's unique Slavic reference service is in year-round operation, answering queries from libraries and individual scholars throughout the country.

SOCIAL SCIENCES

(Including Anthropology, Asian Studies, Geography, Latin American and Caribbean Studies, Political Science, and Sociology)

Director of the School: Robert B. Crawford
Coordinator for the Master of Arts: D. J. Bordua
Correspondence and Information: Director of the School of Social Sciences, University of Illinois at Urbana-Champaign, 210 Lincoln Hall, 702 South Wright Street, Urbana, Illinois 61801

The School of Social Sciences includes the Departments of Anthropology, Geography, Political Science, and Sociology, and the Centers for Asian Studies and Latin American and Caribbean Studies. The school is responsible for facilitating interdisciplinary cooperation, not only among the academic units in the school, but across the campus generally; for development of interdepartmental research and instructional facilities, such as the computer-based Social Science Quantitative Laboratory and the Spatial Data Analysis Laboratory; and for representing the social sciences to the public and to public and private agencies outside the University. In addition to the interdisciplinary Master of Arts degree in the social sciences, programs leading to the graduate degrees of Master of Science, Master of Arts, Master of Arts in Public Administration, and Doctor of Philosophy are offered by various departments and centers in the school. These graduate degree programs are described in individual entries in this catalog for each field of study.

Support for graduate training is available in the form of tuition and service fee waivers, teaching and research assistantships, and fellowships. Prospective students may obtain application forms and information relevant to their interests from the executive officer of the appropriate department or center, or from the School of Social Sciences.

Admission. The Graduate College admission requirements apply. Although undergraduate work in the social sciences is considered helpful, the program is designed to be available to a broad spectrum of individuals, including those with little or no previous formal background in the social sciences. Applicants must submit Graduate Record Examination scores on the tests of verbal and quantitative ability.

Master of Arts in the Social Sciences. The School of Social Sciences offers an interdisciplinary program leading to the Master of Arts in the Social Sciences. The program is designed to provide the option of flexible, individualized approaches to advanced training in the social sciences and is intended for students who wish to study in several social science disciplines, and disciplines and areas related to the social sciences, rather than specialize in a single social science field or discipline.

The Master of Arts in the Social Sciences requires 10 units of course work. At least 5 of the 10 required units must be in 400-level courses, and a minimum of 3 of these 5 must be in the major field. Three program options are available.

Quantitative or Survey Research Option. Candidates who wish to augment an interdisciplinary social science major with quantitative and survey research methods have the option of taking a 4-unit major in the social sciences (no more than 3 units can be taken in the same department), 4 units of course work in quantitative and/or survey research methods, and a 2-unit practicum.

Applied Social Science Option. Candidates who wish to augment an interdisciplinary social science major with applied aspects of the social sciences have the option of taking a 4-unit major in the social sciences (no more than 3 units can be taken in the same department), 4 units of course work in applied social science, and a 2-unit master's thesis.

General Social Science Option. Candidates who are interested in the more general or "traditional" aspects of the social sciences and related fields have the option of taking a 6-unit interdisciplinary major in the social sciences (no more than 4 units can be taken in the same department), a 2-unit minor in the social sciences or related field, and a 2-unit master's thesis.

The student's work in the program is supervised by a faculty adviser in the social sciences. To ensure a match between student interest and faculty expertise, the adviser will be identified by the program coordinator following close consultation with the student. In addition to an oral defense of the thesis or practicum, a comprehensive oral examination is required after 8 units of course work. Both the comprehensive examination and oral defense are administered by a three-member faculty committee chaired by the student's adviser.

SOCIAL STUDIES

Correspondence and Information: J. R. Dahl, Director of the Program, University of Illinois at Urbana-Champaign, 309 Gregory Hall, 810 South Wright Street, Urbana, Illinois 61801

Master of Arts in the Teaching of Social Studies. Candidates for admission should hold secondary school social studies teaching certificates. The Graduate College admission requirements apply.

Graduate Degree Program. Eight units of graduate work are required. Four units are to be in the social studies (2 of these must be in history); 3 units in educational psychology, educational policy studies, and secondary and continuing education; and 1 unit in an elective chosen in consultation with the director of the program.

SOCIAL WORK

Acting Dean of the School: Frank H. Itzin

Correspondence and Information: Assistant Dean, School of Social Work, University of Illinois at Urbana-Champaign, 1207 West Oregon Street, Urbana, Illinois 61801

GRADUATE FACULTY

Professors: P. R. Balgopal, L. B. Costin, K. Gould, C. H. Henderson, F. H. Itzin, E. V. Mech, M. A. Taber

Associate Professors: C. D. Cowger, M. L. Flynn, M. M. Monkman, A. J. Vattano, N. A. Weinberg

Assistant Professors: R. M. Berger, J. P. Bowker, E. N. Gullerud, J. D. Kagle, P. A. Meares, M. A. Patchner, K. O. Proch, G. L. Shaffer, P. A. Wilson

Graduate Degree Programs. The School of Social Work offers programs leading to the Master of Social Work and the Doctor of Philosophy degrees.

Admission. For the M.S.W. program applicants must meet the following minimum requirements: (1) Graduation from an accredited college or university with requirements for the bachelor's degree comparable to those of the University of Illinois at Urbana-Champaign. (2) An undergraduate grade-point average of at least 4.0 (A = 5.0) for the last 60 semester hours of completed work. (3) A supplementary statement submitted with the application for admission to the School of Social Work. This is a very important document in support of the application. The outline for this statement appears on the last page of the school's application form. (4) Evidence of personal qualifications suitable to the profession of social work. (5) A minimum of 20 hours in social sciences courses. (6) A course in statistics. (7) A course in human development.

The Ph.D. program is designed for students who demonstrate leadership potential and have an advanced degree in a human services profession. A grade-point average of 4.0 (A = 5.0) is required for consideration. Applicants must submit Graduate Record Examination scores on the tests of verbal and quantitative ability.

Master of Social Work. The M.S.W. curriculum may be completed in eighteen months of continuous full-time study. A sixteen-month program is available for students who hold the B.S.W. degree from an accredited institution. Students are encouraged to include electives from other departments. A twenty-eight-week field placement in a social service agency is required. Concentrations include child advocacy, community mental health, school social work, health care, policy, planning and administration, and a generic track.

Doctor of Philosophy. The Ph.D. program is typically a 16-unit program for students who enter with a M.S.W. degree and is interdisciplinary with a strong research emphasis. Anthropology, economics, education, industrial and labor relations, political science, law, psychology, sociology, and urban planning are among the disciplines that contribute to the program. Candidates are prepared for leadership in teaching, research, policy analysis, development, and implementation.

SOCIOLOGY

Head of the Department: Joan Huber
Director of Graduate Studies: J. Kluegel
Correspondence and Information: Department of Sociology, University of Illinois at Urbana-Champaign, 326 Lincoln Hall, 702 South Wright Street, Urbana, Illinois 61801

GRADUATE FACULTY

Professors: D. J. Bordua, H. Choldin, N. Denzin, F. Fliegel, W. Form, J. Gorecki, J. Huber, N. Jacobs, H. M. Johnson, B. Karsh, G. Lueschen, J. Robinson, R. J. Simon, J. Spaeth, S. Sudman, J. C. van Es
Associate Professors: W. Cockerham, M. Felson, M. Gottfredson, R. Jones, J. Kluegel, C. McPhail, G. McWorter, R. Schoen, A. Sofranko, M. Solaun, K. Southwood, N. Wiley
Assistant Professors: A. Flood, G. Stevens

Graduate Degree Programs. The Department of Sociology offers graduate work leading to the Master of Arts and Doctor of Philosophy degrees.

Admission. The Graduate College admission requirements apply. Students applying for admission should have a strong background in one of the social sciences, preferably sociology. Applicants must submit Graduate Record Examination scores on the tests of verbal ability, quantitative ability, and the advanced test in sociology.

Doctor of Philosophy. Considerable specialization around a core of sociological knowledge is encouraged to prepare students for careers in research and teaching at the college and university level, and for research careers in government and in-

dustry. Departmental programs include applied social statistics, population studies, cross-national comparative sociology, law and society, social psychology, medical sociology, and work and organizations. Candidates must be examined and certified as competent in sociological theory, statistics, research methods, two substantive areas, and one area of specialization. Additional information may be found in the "Sociology Handbook for Graduate Students," available from the department.

Master of Arts. The Master of Arts program is generally viewed as a first (and optional) step toward the doctorate. Admission requirements are indicated above. A candidate for the A.M. degree in sociology must earn 10 units of graduate credit, or 7 units of course work plus an acceptable master's thesis. The course work must include research methods and one advanced course in statistics.

Social Statistics. This program of study is for those who wish to apply statistical methods to the study of sociology. It fulfills the requirement for the degree of Master of Science (or of Arts) in statistics, administered by the Department of Mathematics, and may be pursued simultaneously with an advanced degree program in sociology. See the entry in this catalog under the heading Statistics.

SPANISH, ITALIAN, AND PORTUGUESE

(Including Catalan and Rumanian)

Chairperson of the Department: S. W. Baldwin

Correspondence and Information: Department of Spanish, Italian, and Portuguese, University of Illinois at Urbana-Champaign, 4080 Foreign Languages Building, 707 South Mathews Avenue, Urbana, Illinois 61801

GRADUATE FACULTY

Professors: S. W. Baldwin, W. C. Blaylock, B. Dutton, R. E. Lott, A. M. Pasquariello, A. Porqueras-Mayo, R. A. Preto-Rodas, M. D. Saltarelli

Associate Professors: A. Aiex, A. Carreño, A. Cassell, T. C. Meehan, A. Musumeci, D. Wanner

Assistant Professors: J. Lett, M. A. Lewis, D. Palencia-Roth, J. Wilcox

Graduate Degree Programs. The Department of Spanish, Italian, and Portuguese offers work leading to the Master of Arts and Doctor of Philosophy in Spanish, in Italian, or in Portuguese, and to a Master of Arts in the Teaching of Spanish. Fields of concentration are Spanish linguistics, Romance linguistics, Spanish literature, Latin American literature, Italian linguistics, Italian literature, and Portuguese language and literature. Graduate courses in Catalan and Rumanian are available.

Admission. The Graduate College admission requirements apply. The normal prerequisite for a graduate major is an undergraduate major in a Romance language, or consent of the department. Applicants living in the United States must submit Graduate Record Examination scores for the aptitude test (advanced test also required for candidates in Spanish). Students doing graduate work for any advanced degree in Spanish, Italian, or Portuguese must possess or acquire a practical command of the language. Parallel training in one or more other languages or literatures, such as English, French, German, Greek, or Latin, is desirable.

The programs in Spanish are described below. Similar programs are available for students who wish to major in Italian or Portuguese. For additional information consult the department.

Master of Arts. In addition to fulfilling the general requirements of the Graduate College, candidates must pass a comprehensive examination based on course work and on a general reading list. Three areas of specialization are offered: Spanish and Spanish American literature, Spanish linguistics, and the teaching of Spanish.

Detailed statements of the course requirements for each specialization may be obtained from the department.

Doctor of Philosophy. Students working toward the Doctor of Philosophy degree are admitted with provisional departmental status until their performance in graduate work is judged acceptable for full departmental status by the department's graduate committee. A comprehensive written examination is used as a basis for this judgment. Candidates are required to present evidence of a reading knowledge of French and of one other language to be selected in consultation with the adviser.

Six areas of specialization are available: medieval literature, Renaissance and Golden Age, Spanish literature of the nineteenth and twentieth centuries, Latin American literature, Spanish linguistics, and Romance linguistics. For the specialization in Spanish linguistics, general linguistics is a required minor; the department should be consulted on the selection of minors for the other specializations.

SPEECH AND HEARING SCIENCE

Head of the Department: Robert C. Bilger

Correspondence and Information: Head, Department of Speech and Hearing Science, University of Illinois at Urbana-Champaign, 901 South Sixth Street, Champaign, Illinois 61820

GRADUATE FACULTY

Professors: R. Bilger, C.-W. Kim, J. J. O'Neill, W. R. Zemlin

Associate Professors: M. A. O'Neill, E. P. Paden, L. J. Sanders, R. K. Simpson, C. Trahiotis, E. Yairi

Assistant Professors: J. Colton, J. G. Erickson, C. Johnson, J. Nuetzel

Graduate Degree Programs. The department offers courses leading to the Master of Arts, Master of Science, and Doctor of Philosophy degrees, with specialization in speech pathology, audiology, language development and its disorders, and speech or hearing science.

Admission. Admission to the master's degree programs requires satisfactory completion of a bachelor's degree. The Graduate College requirements apply. Background should include 16 hours of undergraduate credit in the following areas or their equivalents: speech pathology, audiology, phonetics, anatomy and physiology of the vocal mechanism, hearing science, or speech science, and/or voice science.

Master of Science. The program leading to the degree of Master of Science is usually considered to be a terminal program for the purpose of training competent clinicians who intend to seek employment in the school environment. It is designed to provide comprehensive knowledge of the various types of speech, hearing, and language disorders; their causes; the principles of diagnostic and therapeutic management; and course and practicum work in the school speech and language program, including student teaching. It is designed to meet the academic and clinical requirements for state and American Speech and Hearing Association (ASHA) certification. For students entering with no deficiencies, this program requires: (1) 8 units from a group of courses appropriate to the areas of speech pathology, audiology, or language and (2) 2 units from selected courses in education. At least 3 of the 8 units from the speech pathology, audiology, or language areas must be at the 400 level.

Master of Arts. In pursuing a Master of Arts, the student may concentrate in one of five areas: clinical audiology, educational audiology, language development and its disorders, speech and hearing science, or speech pathology. This degree may be taken as either a terminal degree or as preparation for further graduate study.

As a terminal degree, the Master of Arts program is designed to ensure clinical competence in audiology or speech/language pathology necessary for employment

in a hospital, clinic, private clinic, residential center, or school system. Successful completion of this program ensures that the student has met the academic and clinical requirements for ASHA certification and can possibly qualify the student for state certification.

As a nonterminal degree, the Master of Arts program lets the student take fundamental course work that will be an integral part of an overall doctoral program.

The student's program for the Master of Arts degree will be determined on an individual basis, taking into consideration the Graduate College and departmental requirements. It will be comprised of 10 to 13 units from the five specialized areas and related areas. At least 5 units must be at the 400 level. The only courses required of all Master of Arts candidates are Speech and Hearing Science 399 (Design and Analysis of Experiments in Speech and Hearing Science) and Speech and Hearing Science 496 (Proseminar in Speech and Hearing Science). A master's thesis should be part of the predoctoral student's plan of study. Students seeking a Master of Arts as a terminal degree are also free to do a thesis as educational enrichment.

Doctor of Philosophy. Admission to the doctoral program requires completion of a master's degree, or the equivalent, in speech and hearing science or a related area. The program may be planned with specialization in any one of the five areas: audiology, language development and its disorders, speech pathology, speech science, or hearing science. The minimum academic course requirements for this degree are 8 units beyond the master's degree and a thesis. If there are deficiencies in the student's background, additional courses will be required, and courses taken for this purpose are usually not counted toward the minimum requirement. In addition, doctoral students who did not write a thesis as part of their master's program will be required to complete the equivalent of a master's thesis, and these 2 units will not count toward the minimum academic requirement of 8 units. Individual programs of study will be tailored to the special needs of the student and are planned by the student and the adviser. The only courses which are required are Speech and Hearing Science 475 (Experimental Phonetics, I), Speech and Hearing Science 476 (Experimental Phonetics, II), and Speech and Hearing Science 496 (Proseminar in Speech and Hearing Science).

If the student enters with no deficiencies, the first year or two of the doctoral program is typically devoted to course work in the area of concentration selected by the student, and terminates when the preliminary examination is passed. Subsequent time is devoted to research on a special topic and culminates with the writing of a thesis and passing an oral examination in its defense.

SPEECH COMMUNICATION

Head of the Department: Jesse G. Delia
Director of Graduate Study: J. W. Wenzel
Correspondence and Information: Director of Graduate Study, Department of Speech Communication, University of Illinois at Urbana-Champaign, 244 Lincoln Hall, 702 South Wright Street, Urbana, Illinois 61801

GRADUATE FACULTY

Professors: K. E. Andersen, J. J. Bateman, J. G. Delia, R. E. Nebergall
Associate Professors: R. A. Clark, D. E. Hewes, C. Kramarae, J. H. Maclay, D. R. Seibold, D. L. Swanson, J. W. Wenzel
Assistant Professors: D. Bartine, T. M. Conley, L. Grossberg, R. D. McPhee, B. J. O'Keefe, D. J. O'Keefe, M. S. Poole

Graduate Degree Programs. The Department of Speech Communication offers courses leading to the Master of Arts and Doctor of Philosophy and the Master of Arts in the Teaching of Speech Communication degrees.

Admission. In addition to the Graduate College requirements, the academic aptitude portion of the Graduate Record Examination is required in all curricula. Applicants for admission to doctoral programs and all fellowship candidates are required to submit a sample of written academic work.

Master of Arts. For the degree of Master of Arts, students may concentrate in rhetorical and communication theory or in interpretation. The entering student should present the equivalent of 16 hours of undergraduate work in speech, communications, or interpretation. In addition to meeting general graduation requirements of the Graduate College, a final written examination is required of all candidates. In some cases an oral examination is also stipulated. A thesis is optional, but may constitute a maximum of 2 units of credit.

Master of Arts in the Teaching of Speech Communication. Candidates must first be admitted to a degree program in rhetorical and communication theory or interpretation. Degree requirements can be met by summer attendance. In meeting Graduate College and departmental requirements, including the comprehensive examination, M.A.T. candidates must complete 6 units of work in the department plus the units of required work in education (see page 92).

Doctor of Philosophy. For the Doctor of Philosophy degree, students may concentrate in rhetoric and communication theory or interpretation. Students are accepted as candidates for the Ph.D. degree who present either a well-rounded undergraduate education with an emphasis in speech communication and a master's in a cognate discipline, or who hold a master's degree in speech communication from an accredited institution.

In addition to meeting general requirements of the Graduate College, the student must satisfactorily complete written and oral preliminary examinations, an oral defense of the thesis prospectus, and an oral defense of the thesis. Students must demonstrate competency in research procedures and tools that may include proficiency in one or more foreign languages, various research methodologies and tools, or cognate academic work.

Specific information on programs of graduate study and financial aid is supplied to all who request it. Financial aid is usually in the form of part-time teaching assistantships.

STATISTICS

The Graduate College Statistics Program and the Department of Mathematics offer the Master of Science degree in statistics with specialization in a variety of areas of application. The degree program consists of a core of three courses in basic statistical theory from the Department of Mathematics, a course in general data analysis, and further course work in a particular discipline as required separately for each specialization. The program offers an additional degree for students earning an advanced degree in the area of application, or provides the primary degree for a master's candidate in applied statistics who is interested in specific disciplinary application.

To be eligible for this program a student must be accepted into either the unit offering the specialization or the Department of Mathematics. The following areas of application are now available: social statistics (Department of Sociology, School of Social Sciences), and mathematical statistics (Department of Mathematics). A specialization in biostatistics will soon be available; other specializations are being prepared.

Full statements of degree requirements are available from the head of the unit offering a specialization or from the graduate supervisor of the Department of Mathematics.

THEATRE

Head of the Department: Burnet M. Hobgood

Correspondence and Information: Head, Department of Theatre, University of Illinois at Urbana-Champaign, 4-122 Krannert Center for the Performing Arts, 500 South Goodwin Avenue, Urbana, Illinois 61801

GRADUATE FACULTY

Professors: J. C. Ahart, C. M. Behringer, B. M. Hobgood, D. Knight, R. Tymchyshyn, B. R. Works
Associate Professor: J. B. Harris
Assistant Professor: R. Graves

Graduate Degree Programs. The Department of Theatre offers graduate work leading to the Master of Arts, the Master of Fine Arts, and the Doctor of Philosophy.

Admission. Applicants will be considered if they present transcripts documenting undergraduate or graduate study of dramatic literature, theatre history, and theatre practice; in the case of the M.F.A. degree, intensive experience in performance and/or production of plays is necessary, whether or not this activity occurred in an academic context. The faculty expects all applicants to have a cumulative grade-point average of at least 4.0 (A = 5.0) in the study of theatre subjects; A.M. and Ph.D. candidates are to have a 4.0 grade-point average in all subjects studied at the graduate or undergraduate levels.

Master of Arts. A candidate for the A.M. degree must spend at least two semesters in residence; must complete at least 8 units of course work in theatre and related studies, including at least 2 units in history and theory of theatre and 2 in applied theatre; and must pass a final comprehensive examination. Three units must be at the 400 level, and 2 of the 3 must be in theatre. A full-time student can complete this program in one academic year.

Master of Fine Arts. The M.F.A. is a terminal degree in the areas of theatre practice. The candidate for the degree must be in residence six semesters and complete 18 units. Depending on the evaluations of a diagnostic process during the first semester of residence, up to one year of residence and 4 units of credit may be waived by the faculty. Course work must include at least 8 units in studio, colloquium, or creative projects, and 3 others in department-approved electives. Only full-time students will be admitted to the program; residence only in summer sessions will not suffice.

Doctor of Philosophy. Requirements for the degree are a minimum of 8 units in courses in theatre and related studies beyond the master's degree; a reading knowledge of two foreign languages, or of one foreign language and one of the prescribed substitutes; a minimum of 8 units of thesis research; a comprehensive oral and written examination; and defense of the dissertation before a committee of the graduate faculty. The program requires two to three years beyond the master's degree to complete.

THEORETICAL AND APPLIED MECHANICS

Head of the Department: Richard T. Shield
Graduate Program Coordinator: J. Morrow
Correspondence and Information: Graduate Program Coordinator, Department of Theoretical and Applied Mechanics, University of Illinois at Urbana-Champaign, 216 Talbot Laboratory, 104 South Wright Street, Urbana, Illinois 61801

GRADUATE FACULTY

Professors: R. J. Adrian, J. D. Buckmaster, D. E. Carlson, M. E. Clark, H. T. Corten, G. A. Costello, D. C. Drucker, R. A. Eubanks, C. E. Kesler, F. A. Leckie, R. E. Miller, J. Morrow, J. W. Phillips, J. M. Robertson, R. T. Shield, O. M. Sidebottom, G. M. Sinclair, J. S. Walker, W. J. Worley
Associate Professor: S. S. Wang

Assistant Professors: L. A. Bergman, J. G. Harris, R. E. Johnson, R. M. McMeeking, D. L. Stewart, R. L. Weaver

Graduate Degree Programs. The graduate programs in the Department of Theoretical and Applied Mechanics lead to the Master of Science and Doctor of Philosophy degrees. Major areas of study and research are applied mathematics, dynamics and vibrations, fluid mechanics, materials engineering, and solid mechanics.

Admission. Applicants should have the bachelor's or master's degree in engineering, mathematics, physics, or related fields and meet the Graduate College requirements for admission.

Master of Science. Candidates are required to complete a minimum of 8 units of graduate work including a thesis (ordinarily 2 units) and to maintain a minimum grade-point average of 4.0 (A = 5.0). Students are required to register for the seminar in engineering mechanics. If a student elects not to present a thesis, 9 units of course work are required. Three units must be at the 400 level, and 2 of the 3 must be in theoretical and applied mechanics. A full-time student can normally complete this program in one academic year of study. A student who has an assistantship can normally complete the requirements in one calendar year.

Doctor of Philosophy. Candidates for the Doctor of Philosophy degree are required to complete 8 units of course work beyond the master's degree with a minimum grade-point average of 4.0, including at least a ½ unit from each of the following major areas in the department: applied mathematics, dynamics and vibrations, fluid mechanics, materials engineering, and solid mechanics. Students are required to register for the seminar in engineering mechanics. A student must pass an oral preliminary examination before commencing the thesis. The thesis research normally comprises about half of the work beyond the master's degree. A student can normally complete the Ph.D. program in two years of study beyond the master's degree.

Financial Aid. Half-time teaching and research assistantships allow students to take three-quarters of a full schedule of graduate courses. For 1981-82, the half-time stipend for beginning students is $5,500 for the nine-month academic year plus exemption from tuition and service fees. Advanced students receive up to $5,800. Assistantship applications can be made at any time before the term of entrance. Some University Fellowships are also available.

Research Interests. Some of the areas of theoretical and experimental research currently being investigated by graduate students and faculty members are: fracture control, crack propagation, metal fatigue, fiber-reinforced materials, cycle-dependent deformations, plasticity of composites, creep of metals and composites, elasticity, finite elastic deformations, structural optimization, thermoelasticity, elastic stability, evaluation of plasticity theories, finite element methods, holographic interferometry, dynamic photoelasticity, numerical stress analysis, flow of viscous fluids, blood flow in arteries, biomechanics, turbulent boundary-layer theory, magnetohydrodynamics, non-Newtonian fluid flow, atmospheric turbulence, dynamics of springs and cables, elastic wave propagation, vibrations of shells, vibration isolation, and combustion.

URBAN AND REGIONAL PLANNING

Head of the Department: Carl V. Patton

Correspondence and Information: Head of the Department of Urban and Regional Planning, University of Illinois at Urbana-Champaign, 1003 West Nevada Street, Urbana, Illinois 61801

GRADUATE FACULTY

Professors: L. F. Blair, D. E. Boyce, C. W. Forrest, E. C. Freund, W. I. Goodman, A. Z. Guttenberg

Associate Professors: L. F. Heumann, L. D. Hopkins, T. J. Kim, C. V. Patton, M. C. Romanos
Assistant Professors: B. N. Checkoway, E. R. Jones

Graduate Degree Program. The Department of Urban and Regional Planning offers graduate work leading to the degree of Master of Urban Planning. A Ph.D. degree program is pending final approval.

Admission. While the social sciences, the design professions, engineering, and urban planning are relevant undergraduate backgrounds for graduate work in planning, consideration will also be given to students prepared in the humanities, the physical sciences, and other fields. The Graduate College admission requirements apply. Foreign applicants must score 590 or better on the TOEFL. The Graduate Record Examination is recommended for persons who desire consideration for all types of financial aid.

Master of Urban Planning. The master's degree program is designed to prepare students for careers in professional planning practice. Such careers can involve service in public agencies at any of the levels of government, in private consulting practice, or in other organizations in need of planning services. Alternatively, the program may prepare students for advanced work leading to the Ph.D. degree and a career in teaching and research, or both. The program combines a set of minimum requirements with a high degree of flexibility and choice. The course of study ordinarily requires two years. First-year students typically take courses focusing on the basic elements of planning, including studies in planning theory, analytical methods, spatial organization, and implementation. The second year provides opportunities for further work in areas of specialized interest, including environment and land use, housing, transportation, social policy and planning, preservation planning, and regional science. A thesis or a master's project (comparable to the thesis in scope but flexible in the types of projects which can be carried out) is required. An internship experience during the summer between the first and second year or participation in the summer program in Greece is highly recommended.

To qualify for the degree, a student must complete a minimum of either: (1) 15 units, if a zero-credit internship course (Urban Planning 490) is successfully completed; or (2) 16 units, if the internship course is not elected. The internship must be preceded and succeeded by at least one semester of course work in residence on the University of Illinois at Urbana-Champaign campus. At least 10 units must be in urban and regional planning courses (9 units for students completing Urban Planning 490). At least 4 units must be at the 400 level, and 3 of these must be in urban and regional planning.

Financial Aid. Fellowships, tuition and service fee waivers, teaching assistantships, and research assistantships are available each year. Financial aid is awarded on the basis of the student's previous academic record and other indicators of potential. In the case of assistantships, the possession of specific teaching or research capabilities is a consideration.

Faculty Research Interests. Members of the faculty are engaged in research, public service, and continuing education through the Bureau of Urban and Regional Planning Research. These efforts are undertaken in the areas of land use, environmental planning, energy, housing, social planning, transportation, historic preservation, and regional science.

Library Resources. The department has one of the finest planning libraries in the world, with a collection of books and reports developed during the more than fifty years that planning education has been offered at this university.

VETERINARY MEDICAL SCIENCE

Dean of the College of Veterinary Medicine: Richard E. Dierks

Correspondence and Information: The College of Veterinary Medicine is currently realigning the administration of its graduate programs from a single program (Veterinary Medical Science) to three programs corresponding to the academic departments in the college (Veterinary Biosciences, Veterinary Clinical Medicine, and Veterinary Pathobiology). Graduate students are now being admitted directly to one of the three academic department programs. Students who entered graduate study in veterinary medical science prior to January 1, 1980, may choose to remain in the general veterinary medical science classification or to be assigned to one of the three departmental programs. Faculty members in veterinary medical science are in three academic departments as listed below.

Veterinary Biosciences

Head of the Department: WILLIAM C. WAGNER

Correspondence and Information: Department of Veterinary Biosciences, University of Illinois at Urbana-Champaign, 269 Veterinary Medicine Building, 1101 West Peabody Drive, Urbana, Illinois 61801

GRADUATE FACULTY

Professors: R. F. BEVILL, W. B. BUCK, L. E. DAVIS, B. K. GUSTAFSSON, L. C. HELPER, G. L. JACKSON, R. F. KEELER, A. H. SAFANIE, A. G. SCHILLER, J. L. SHUPE, E. SMALL, J. C. THURMON, A. R. TWARDOCK, W. C. WAGNER, H. WHITMORE

Associate Professors: L. G. HANSEN, E. H. HEATH, G. D. KORITZ, A. J. PARKER, D. L. SMETZER, C. W. SMITH

Assistant Professors: R. V. ALLHANDS, J. E. HIXON, K. R. HOLMES, T. F. LOCK, M. MANOHAR, G. J. PIJANOWSKI, M. R. SIMON, L. E. STEIN, M. C. THEODORAKIS

Graduate Degree Programs. The Department of Veterinary Biosciences offers graduate work leading to the degrees of Master of Science and Doctor of Philosophy. Areas of specialization include anatomy, physiology, pharmacology, toxicology, and nuclear medicine. Each specialty area has a core of required courses supplemented by other courses within the Department of Veterinary Biosciences and from other departments of the Graduate College. Laboratory and animal holding space is provided in the Basic Sciences Building, Veterinary Teaching Hospitals, and the Veterinary Research Farm.

Admission. Applicants for graduate study in veterinary biosciences must have a minimum grade-point average of 4.0 (A = 5.0). Applicants with a grade-point average between 3.5 and 4.0 may be considered for admission on a probationary status on the basis of individual merit. Grade-point averages will be calculated on the last 60 hours of undergraduate studies for those without the D.V.M. degree or on the entire professional curriculum for those with the D.V.M. degree. Applicants with a graduate degree or with some graduate course work will be evaluated on the basis of their graduate work as well as their undergraduate or professional record. Qualifications of students must be approved by the department's committee on admission of graduate students.

Master of Science. The requirements for the degree are: (1) 8 units of graduate credit, of which 4 units must be in veterinary biosciences and a minimum of 3 units must be in courses at the 400 level; (2) ¼ unit of veterinary biosciences seminar credit; (3) thesis on original research; and (4) final comprehensive examination.

Doctor of Philosophy. The requirements for the degree include: (1) 24 units of graduate credit, 12 units of which, including thesis research, must be in veterinary biosciences and 6 units of which must be in other departments of the Graduate College; (2) ½ unit of veterinary biosciences seminar credit; (3) reading proficiency in one foreign language; (4) passage of the preliminary examination; and (5) a satisfactory original thesis and defense of the thesis in a final examination.

Financial Aid. A limited number of research and teaching assistantships or associate positions are available.

Veterinary Clinical Medicine

Head of the Department: Borje K. Gustafsson
Correspondence and Information: Department of Veterinary Clinical Medicine, University of Illinois at Urbana-Champaign, 244 Small Animal Clinic, 1008 West Hazelwood Drive, Urbana, Illinois 61801

GRADUATE FACULTY

Professors: R. L. Backstrom, G. Baker, R. F. Bevill, B. O. Brodie, L. E. Davis, J. L. Dorner, B. K. Gustafsson, L. C. Helper, A. G. Schiller, E. Small, C. W. Smith, J. C. Thurmon, A. R. Twardock, W. C. Wagner, H. L. Whitmore
Associate Professors: T. J. Burke, J. E. Hixon, W. E. Hoffmann, S. K. Kneller, T. F. Lock, J. P. Manning, M. Manohar, D. R. Nelson, R. S. Ott, A. J. Parker, D. L. Smetzer, J. L. Stowater, W. A. Wolff
Assistant Professors: W. M. Adams, G. J. Benson, M. Boero, A. H. Brightman, J. Di Pietro, R. Johnson, P. Langner, B. C. McKiernan, T. A. McPherron, E. E. Musselman, T. A. Turner, A. VanDeWater

Graduate Degree Program. The Department of Veterinary Clinical Medicine offers a graduate program leading to the Master of Science degree. The primary goal of graduate study in veterinary clinical medicine is to prepare the student for a career of research and teaching in a specialty area. Graduate work in veterinary clinical medicine may be pursued in several fields of specialization including anesthesiology, equine medicine and surgery, food animal medicine and surgery, ophthalmology, radiology, small animal medicine and surgery, and theriogenology (animal reproduction).

The student's needs for clinical exposure will vary with the candidate and the candidate's field. Advanced clinical training is required. The clinical training can be organized in different ways depending on the student's course work, teaching duties, and research program. Usually, it will be arranged so that the student takes part in clinical work at the Veterinary Medical Teaching Hospital or in the field.

The department also offers a postgraduate clinical training program (residency) that is designed to provide advanced clinical training usually leading to board certification in a specialty. A residency program can be combined with the graduate program to provide the resident with research training.

Admission. Admission requirements include a Doctor of Veterinary Medicine degree or equivalent. By petition, non-D.V.M. applicants with an equivalent degree or education could be admitted.

Applicants for graduate study in veterinary clinical medicine must have a minimum grade-point average of 4.0 (A = 5.0). Applicants with a grade-point average between 3.5 and 4.0 may be considered for admission on a probationary status on the basis of individual merit. Admission averages are computed from the last 60 hours of undergraduate studies for those without the D.V.M. degree or on the entire professional curriculum for those with a D.V.M. degree. Applicants with a graduate degree or with some graduate course work will be evaluated on the basis of their graduate work as well as their undergraduate or professional record. Qualifications of students must be approved by the department's committee on admission of graduate students.

Master of Science. The requirements for the degree are: (1) 8 units of credit of which 4 units must be in veterinary clinical medicine, veterinary biosciences, or veterinary pathobiology and a minimum of 3 units must be in courses at the 400 level; (2) ¼ unit of veterinary clinical medicine seminar credit; (3) thesis of original research; (4) final comprehensive examination.

Financial Aid. A limited number of teaching associate positions are available.

Veterinary Pathobiology

Head of the Department: JOHN A. SHADDUCK

Correspondence and Information: Department of Veterinary Pathobiology, University of Illinois at Urbana-Champaign, 57 Veterinary Medicine Building, 1101 West Peabody Drive, Urbana, Illinois 61801

GRADUATE FACULTY

Professors: H. W. CASEY, R. E. DIERKS, J. L. DORNER, P. R. FITZGERALD, L. E. HANSON, N. D. LEVINE, K. MCENTEE, R. C. MEYER, W. L. MYERS, M. RISTIC, D. SEGRE, J. A. SHADDUCK, J. SIMON, K. S. TODD, W. A. F. TOMPKINS, A. M. WATRACH, G. T. WOODS

Associate Professors: L. G. BIEHL, P. B. CARTER, D. H. FRITTS, W. E. HOFFMANN, V. R. IVENS, H. A. REYNOLDS, R. D. SMITH, D. N. TRIPATHY

Assistant Professors: R. W. ELY, H. B. GELBERG, E. C. HAHN, M. G. LEVY, R. E. MOCK, M. SEGRE, H. L. SHIVAPRASAD, A. R. SMITH

Graduate Degree Programs. The Department of Veterinary Pathobiology offers graduate work leading to the degrees of Master of Science and Doctor of Philosophy. Areas of specialization include epidemiology, immunology, microbiology, parasitology, clinical pathology, and pathology. Each specialty area has a core of required courses supplemented by other courses within the Department of Veterinary Pathobiology and from other departments of the Graduate College.

Admission. Applicants for graduate study in veterinary pathobiology must have a minimum grade-point average of 4.0 (A = 5.0). Applicants with a grade-point average between 3.5 and 4.0 may be considered for admission on a probationary status on the basis of individual merit. Grade-point averages will be calculated on the last 60 hours of undergraduate studies for those without the D.V.M. degree or on the entire professional curriculum for those with the D.V.M. degree. Applicants with a graduate degree or with some graduate course work will be evaluated on the basis of their graduate work as well as their undergraduate or professional record. Qualifications of students must be approved by the department's committee on admission of graduate students.

Master of Science. The requirements for the degree are: (1) 8 units of credit, of which 4 units must be in veterinary pathobiology and a minimum of 3 units must be in courses at the 400 level; (2) ¼ unit of veterinary pathobiology seminar credit; (3) thesis on original research or a publishable manuscript; (4) final comprehensive examination.

Doctor of Philosophy. The requirements for the degree are: (1) 24 units of credit (8 units toward the Ph.D. degree are allowed for an M.S. degree completed elsewhere), 12 units of which (including thesis research) must be in the Department of Veterinary Pathobiology and 6 units of which must be in other departments of the Graduate College; (2) ½ unit of veterinary pathobiology seminar credit; (3) reading proficiency in either French, German, Russian, or Spanish (other languages may be approved by petition); (4) passage of the preliminary examination; and (5) a satisfactory original thesis and defense of the thesis in a final examination.

Financial Aid. A limited number of teaching and research assistantships, or associate positions are available.

Official Course Abbreviations

A.A.E.	Aeronautical and astronautical engineering
Accy.	Accountancy
Adv.	Advertising
A.F.A.S.	Air Force aerospace studies
Afro.	Afro-American studies
Afr. St.	African studies
Ag. Com.	Agricultural communications
Ag. E.	Agricultural engineering
Ag. Ec.	Agricultural economics
Ag. M.	Agricultural mechanization
Agr.	Agriculture
Agron.	Agronomy
A.H.C.E.	Administration, higher, and continuing education
Anat.	Anatomical sciences
An. S.	Animal science
Anth.	Anthropology
Arab.	Arabic
Arch.	Architecture
Art & D.	Introduction to art and design
Art Ci.	Cinematography
Art Cr.	Crafts
Art Ed.	Art education
Art Gd.	Graphic design
Art Gp.	General professional courses in art and design
Art Hi.	History of art
Art Id.	Industrial design
Art Pa.	Painting
Art Ph.	Photography
Art Pr.	Printing
Art Sc.	Sculpture
As. St.	Asian studies
Astr.	Astronomy
Atmos.	Atmospheric sciences
Avi.	Aviation
B. Adm.	Business administration
Bands	Bands
B. & T. W.	Business and technical writing
Bio. Ch.	Biochemistry
Bio. En.	Bioengineering
Biol.	Biology
Bio. Ph.	Biophysics
Bot.	Botany
Bus.	Business
Catal.	Catalan
C.E.	Civil engineering
Cer. E.	Ceramic engineering
Ch. E.	Chemical engineering
Chem.	Chemistry
Chin.	Chinese
Cl. Civ.	Classical civilization
C. Lit.	Comparative literature
Comm.	Communications
Cop.	Coptic
C.S.	Computer science
Czech.	Czech
Dance	Dance
D.S.	Dairy science
Econ.	Economics
Ed. Pr.	Educational practice
Ed. Psy.	Educational psychology
Educ.	Education
E.E.	Electrical engineering
E.E.E.	Ecology, ethology, and evolution
El. Ed.	Elementary and early childhood education
Eng.	Engineering
Eng. H.	Engineering honors
Engl.	English
Entom.	Entomology
Env. St.	Environmental studies
E.P.S.	Educational policy studies
E.S.L.	English as a second language
F.A.A.	Fine and applied arts
F.A.C.E.	Family and consumer economics
Fin.	Finance
F.N.	Foods and nutrition
For.	Forestry
Fr.	French
F.S.	Food science
G.&D.	Genetics and development
G.E.	General engineering
Geog.	Geography
Geol.	Geology
Ger.	German
Gmc.	Germanic
Grk.	Greek
H.D.F.E.	Human development and family ecology
H. Ed.	Health education
Hebr.	Hebrew
Hindi	Hindi
Hist.	History
Hort.	Horticulture
H.R.F.S.	Human resources and family studies
Human.	Humanities
I.D.	Interior design
I.E.	Industrial engineering
Ital.	Italian
Japan	Japanese
Journ.	Journalism
Korea	Korean
L.A.	Landscape architecture
L.A.S.	Liberal arts and sciences
La. St.	Latin American and Caribbean studies
Lat.	Latin

Law	Law
Lei. St.	Leisure studies
L.I.S.	Library and information science
Ling.	Linguistics
L.I.R.	Labor and industrial relations
Math.	Mathematics
Mc. Bio.	Microbiology
M.E.	Mechanical engineering
Med. S.	Medical sciences
Met. E.	Metallurgical engineering
M. Grk.	Modern Greek
Mil. S.	Military science
Min. E.	Mining engineering
Music	Music
Na.	Medical-surgical nursing
Ne.	Public health nursing
Ns.	General nursing
N. S.	Naval science
Nuc. E.	Nuclear engineering
Nutrs.	Nutritional sciences
P.E.	Physical education
Pers.	Persian
Phil.	Philosophy
Phycs.	Physics
Physl.	Physiology
Pl. Pa.	Plant pathology
Pol.	Polish
Pol. S.	Political science
Port.	Portuguese
Psych.	Psychology
Rel. St.	Religious studies
Rhet.	Rhetoric and composition
Rm. Lng.	Romance linguistics
R. Soc.	Rural sociology
Ruman.	Rumanian
Russ.	Russian
R. TV	Radio and television
San. Sk.	Sanskrit
Scan.	Scandinavian
S. Cr.	Serbo-Croatian
S. Ed.	Safety education
Se. Ed.	Secondary education
Slav.	Slavic
Soc.	Sociology
Soc. S.	Social science
Soc. W.	Social work
Soils	Soils
Sp. Ed.	Special education
Span.	Spanish
Sp. Com.	Speech communication
S.P.S. H. S.	Speech and hearing science
Swhli.	Swahili
T.A.M.	Theoretical and applied mechanics
T.C.	Textiles and clothing
Theat.	Theatre
Ukr.	Ukrainian
U.P.	Urban and regional planning
V.B.	Veterinary biosciences
V.C.M.	Veterinary clinical medicine
V.M.S.	Veterinary medical science
V.P.	Veterinary pathobiology
Vo. Tec.	Vocational and technical education

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Graduate admissions information and applications

GRADUATE AND INTERNATIONAL ADMISSIONS
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408 Metallurgy and Mining Building, 1304 West Green Street
Urbana, Illinois 61801 (217) 333-0413

or

THE GRADUATE COLLEGE
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330 Administration Building, 506 South Wright Street
Urbana, Illinois 61801 (217) 333-0035

or

The prospective department

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